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ABSTRACT

The manual is intended to facilitate the initiation of service delivery programs for learning disabled (LD) students in the university mainstream. The first chapter addresses the development of a comprehensive diagnostic and academic support service program; sections detail program initiation activities, assessment, and intervention. The second chapter presents the steps involved in conducting awareness and informational activities for advisors, faculty, counselors, and other staff members; it contains sections on the advisory committee, academic advisors, staff development activities, and university considerations. The next chapter considers the development of materials for dissemination including university and staff materials, and materials for LD students and parents. The last chapter addresses the identification and conduct of research in selected academic areas; sections deal with single subject research design, the development of local norms for assessment purposes, and the identification of unique areas of assessment and intervention. (DB)

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ASSISTING THE LEARNING DISABLED

A Program Development and Service Delivery
Guide for University Service Providers,
Diagnosticians, Tutors, Counselors,
and Learning Disabled Students

1986 ©

Anna Gajar
The Pennsylvania State University

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ASSISTING THE LEARNING DISABLED

A Program Development and Service Delivery Guide for University Service Providers, Diagnosticians, Tutors, Counselors, Learning Disabled Students, and Parents

INTRODUCTION

Institutions of higher learning are faced with the responsibility of providing an appropriate education for Learning Disabled (LD) students. Services for LD students initially provided at the elementary level have recently been expanded to the secondary level. Due to this expansion of services, an increasing number of qualified high school students with specific learning disabilities are attending or seeking admittance to colleges and universities. Based on a large number of requests for learning disabilities services at The Pennsylvania State University, a model program was designed. Components of the program for the mainstreamed University LD student were tested via a four-year pilot study. The pilot study was conducted in order to determine what specialized services were needed by University LD students above and beyond those already provided by the Office for Disability Services. It was found that LD students indeed needed a number of unique services which were incorporated into the model program. Funding for the model program, including the development of this manual, was obtained through the Postsecondary Education Programs for Handicapped Persons of the U.S. Department of Education

Components of the manual were developed for the purpose of facilitating the

initiation of service delivery programs for LD students in the university mainstream, rather than in a separate individualized curriculum or in a remedial or developmental year format. For easy reference, narrative sections are minimized. Although the content of the guide is primarily intended for university level service providers, diagnosticians, tutors, and counselors, sections have been included keeping in mind the needs of parents and LD students. In addition, the research section may be of particular interest to university faculties from various disciplines.

OVERVIEW OF MANUAL CONTENT

Each section of the manual contains a number of components relating to major objectives of any model program intended to serve mainstreamed University LD students.

The first chapter addresses the development of a comprehensive diagnostic and academic support service program for students. Components of this chapter include areas of interest to service providers, diagnosticians, tutors, and counselors: program initiation activities, assessment, and intervention.

The second chapter addresses the steps involved in conducting awareness and informational activities for advisors, faculty, counselors and other staff members involved with students. Of particular interest to program developers and service providers, components of this chapter include the identification of: an advisory comittee, academic advisors, staff development activities, and university considerations.

The third chapter addresses the development of materials for dissemination. Components of this chapter include: university and staff materials, and materials for LD students and parents.

The fourth chapter addresses identifying and conducting research in selected

academic areas. Components of this chapter include areas of interest to individuals involved with research and diagnosis: a discussion of single subject research design, the development of local norms for assessment purposes, and the identification of unique areas of assessment and intervention.

CHAPTER ONE

THE DEVELOPMENT OF A COMPREHENSIVE DIAGNOSTIC AND ACADEMIC SUPPORT SERVICE PROGRAM

COMPONENT A: Program Initiation

Legal Basis. Prior to the consideration of program initiation activities, a discussion of the legal foundation for model university LD programs will be presented. Public Law 93-112, the Rehabilitation Act of 1973, section 504 states: "No otherwise qualified handicapped individual in the United States...shall, solely by reason of his handicap, be excluded from the participation in, be denied the benefits of, or be subjected to discrimination under any activity receiving federal financial assistance." The regulation issued under this statute (specifically Sub-part E) guarantees entrance of qualified handicapped students into college and universities.

Under Section 504, institutions of higher education are obligated to adhere to the following conditions:

1. The University cannot place a limitation on the number of qualified handicapped students who can be admitted.
2. Preadmission inquiries as to whether applicants are handicapped or not cannot be conducted.
3. Students cannot be excluded from a course of study solely on the basis of a handicapping condition.
4. Modifications in degree or academic course requirements must be made

when such requirements discriminate against qualified handicapped students.

5. Rules (such as prohibiting tape recorders in classrooms) must be waived for certain handicapped students.
6. Devices or aids which ensure the full participation of handicapped students in the classroom cannot be prohibited.
7. Alternative testing and evaluation methods for measuring student achievement may be necessary for students with sensory, manual, or speaking skill impairment. (Exceptions includes areas in which these skills are being measured as an indication of achievement.)
8. Faculty members may be requested to adapt teaching techniques and use special devices (such as amplification equipment) for classes in which handicapped students are enrolled.
9. It is discriminatory to counsel handicapped student t oward restrictive careers unless such counseling is justified by the licensing or certification requirement of the profession.
10. Finally, the handicapped students who feel discriminated against have the right to process complaints through university civil rights channels or to initiate legal proceedings on an individual basis.

Personnel. Vogel (1982) outlines the various phases involved in the development of programs for university LD students. An important phase in this development is the identification of personnel. It is the program director's responsibility to contact and obtain the support of interested faculty and staff members from various disciplines and

administrative offices, such as the Office of Disability Services. In addition, the team must include diagnosticians, tutors, and special education specialists. The following list identifies program staff and resource personnel:

STAFF

A. **Program Director:** Program development is dependent on one individual taking the responsibility of coordination and supervision of all program activities. In most programs, one individual who is instrumental in fulfilling the responsibilities of this position can be identified. Traditionally, this position has been filled by a special education faculty member interested in learning disabilities

B. **Handicapped Service Provider:** The director of services to handicapped students, or the coordinator of the Office for Disability Services, functions as a referral source, chairs the program's advisory board, initiates faculty awareness activities, and monitors the University's legal obligations under Section 504 (see above).

C. **Supervisor-School Psychology:** This position is filled by a school psychology faculty member. Responsibilities include the supervision of graduate students in school psychology who function as program diagnosticians.

D. **Graduate Students:** Graduate students in school psychology and special education function under supervision as diagnosticians and intervention specialists. Specific responsibilities are cited under Component B and C (assessment and intervention). In addition, when applicable, they work closely with course tutors.

RESOURCE PERSONNEL

A. **Advisory Board Members:** Interested faculty members and administrators from various disciplines provide advice on every aspect of the program's development. In large universities, members should be identified as soon as possible in order to incorporate cross-disciplinary concerns into the program's structure (See Objective two for additional information)

B. **Academic Advisor:** One person is identified from each discipline to advise LD students. (See Objective two for additional information).

C. **Adjunct Personnel:** Depending on what services are available, contact should be established with each University program or service director. For example: mental health, medical, career and educational counseling, development year,learning center, vocational rehabilitation and veteran administration personnel will occasionally become involved in the delivery of services to program participants.

Methods of Referral. A description of the program's objectives and services should be forwarded to newspapers, prospective students, each collegeand departmental chairperson, local and state organizationsinvolved with LD students, each university service program,and counselors employed by local high schools. Following the distribution of notices, referrals will be either parental or self-initiated. Additional referrals will be made by various University departments, colleges, programs, LD organizations, and faculty. Reason's for referral may include the following:

1. Students identified as LD prior to admission.

2. Students experiencing severe difficulty in one or more of the following areas:
    a. memory
    b. tests
    c. study skills
    d. reading (or spelling)
    e. writing
    f. math
    g. foreign language
    h. time management
    i. social skills
    j. particular course requirements

Initial Contact. The project director should conduct, or at least be present at, each referral intake session. At this meeting, following the completion of an intake questionnaire (see following sample), a decision is made on whether the referral is appropriate. Students with medical, mental, financial, cultural, motivational, or basic skill deficiency, problems should be referred to other programs or services. (See above - Adjunct Personnel)

If the referral is appropriate, the student is informed of the objectives and services which are provided by the program. Assessment instruments (see following section on Assessment), informed consent (see following sample), and possible intervention procedures (see following section on Intervention), are described in detail. The student is then assigned to a graduate student in school psychology and/or special education. Subsequent contacts are made by program graduate assistants.

INTAKE QUESTIONNAIRE

SS#_____

Name: _____

Date of Birth:_____

Local Address:_____

Home Address:_____

Local Phone:_____

Home Phone:_____

Work Phone:_____

University where enrolled:_____ **Term:**_____

Major Area:_____ **Advisor:**_____

Advisor's Phone:_____

Are you enrolled in school this term?_____

Who recommended that you contact The Pennsylvania State University Center for Educational Diagnosis and Remediation for Adult Assessment and/or Learning Disability College Program?

Name:_____

Title:_____

Address:_____

_____

_____

1.Did you receive a high school diploma? Yes_____ No_____

If no, have you completed your GED (Graduate Equivalency Diploma)?

Yes_____ No_____

Explain:

2.Did you receive special services or special programming while completing your elementary or high school education? If so, describe these.

3.When did you first begin studying at PSU?

4.Have you changed your major area of study while at PSU, and if so, please explain what these changes have been.

5.Please list your SAT scores._____

6.Profile Academic abilities._____

_____

_____

7.Please list your current G.P.A.

_____

8.Do you live alone or with other people? _____

How many people do you live with?_____

Briefly describe your current living situation.

9. Are you currently employed? _____ Hours per week?_____

10.Do you have any interests or hobbies? Briefly describe these activities.

11.How do you spend your leisure time?

12.How many hours (average) do you spend studying each day?_____per week?_____

13.Where do you complete most of your studying? at home, in the library, at a friend's? Briefly explain.

14.Have you had any previous evaluations for diagnosis of this problem?

Briefly describe where and when this occurred.

15.When was (were) the problem(s) first experienced by you at the college level?

16.What is your reason for making this referral?

17.How do you think this program will be of help to you?

18.Are you willing to follow through with recommendations that may be made by the program as a result of the evaluation?

19. What is your current schedule? Please list courses and meeting times.

20. Please suggest times you are available for testing and/or meetings with the Project personnel.

21. Please give any additional information which may be helpful to us in understanding your particular situation.

22. Do we have your permission to contact your advisor and/or University Testing Services for the purpose of compiling all available testing and academic information such as SAT, G.P.A., etc.

Yes _____ No_____

I understand that all personal information I supply to the project will be kept strictly confidential unless I give my written persmission.

Signature _____

INFORMED CONSENT FORM

This is to certify that I, _____, hereby agree to participate in the Program for University LD Students as an authorized part of the educational and research program of The Pennsylvania State University, under the supervision of Dr. Anna Gajar and Dr. Mary Ellen Sabatino.

The purpose of the program, assessment instruments, and possible recommendations have been explained to me by _____ and I understand his/her explanation.

I have been given an opportunity to ask whatever questions I may have had and all such questions and inquiries have been answered to my satisfaction.

I understand that I am free to deny any answer to specific items or questions in interviews or questionnaires.

I give my permission for the results of my program to be shared with other professionals for the purpose of program improvement, as well as sharing successful strategies which may be useful in working with other students.

I understand that any data or answers to questions will remain confidential with regard to my identity.

I further understand that I am free to withdraw my consent and terminate my participation in the program at any time; without jeopardizing my current status at the University.

Date_____ Date of Birth _____

Subject's Signature _____

I, the undersigned, have defined and fully explained the investigation to the above subject.

Investigator's Signature _____

COMPONENT B: ASSESSMENT

A program designed to serve university LD students must be founded on solid conceptual and theoretical principles.

Prior to a discussion of specific assessment procedures, a review of the problems surrounding the definition and identification of LD students, theoretical considerations, and a rationale for developing a conceptual framework for programs designed to serve university LD students will be presented.

Definition. The term "learning disabilities" is used to describe those students who experience difficulties in educational settings due to processing problems presumed to be due to central nervous system dysfunction. This situation is problematic for a number of reasons. First, there is disagreement over the definition of learning disabilities which makes identification and diagnosis difficult. The plethora of research on this topic has failed to yield one predominant definition.

The most concise definition of learning disabilities was formulated by the National Advisory Committee on Handicapped Children (Na CHC 1968)., and was subsequently incorporated into PL 94-142. It reads as follows:

> "The term children with specific learning disabilities means those children who have a disorder in one or more of the basic psychological processes involved in understanding or using language, spoken or written which disorder may manifest itself in imperfect ability to listen, think, speak, read, write, spell, or do

mathematical calculations. Such disorders include conditions as perceptual handicaps, brain injury, minimal brain dysfunction, dyslexia and developmental aphasia. Such term does not include children who have learning problems which are primarily the result of visual, hearing, or motor handicaps, of mental redardation, of emotional disturbance, or environmental, cultural or economic disadvantage."

Final Federal regulations for identifying LD students, aspects of which have been adopted by several states, include the following criteria:

(a) The student does not achieve commensurate with his or age and ability levels and/or the student demonstrates a severe discrepancy between achievement and intellectual ability in one or more of the following areas:

(i) Oral Expression;

(ii) Listening Comprehension;

(iii) Written Expression;

(iv) Basic Reading Skill;

(v) Reading Comprehension;

(vi) Mathematics Calculations;

(vii) Mathematics Reasoning.

(b) A student may not be identified as having a specific learning disability if the severe

discrepancy between ability and achievement is primarily the result of:

(i) A visual, hearing, or motor handicap;

(ii) Mental Retardation

(iii) Emotional Disturbance;

(iv) Environmental, cultural or economic disadvantage

(Federal Register, 1977E).

Theory. The second problem associated with the term "learning disabilities" involves the conflict among competing theories about the causes and the nature of this disability. An event associated with this concern involved a meeting of the National Joint Committee for Learnning Disabilities. The committee consisted of representatives from the following areas:

a. American Speech-Language Hearing Association

b.Association for Children and Adults with Learning Disabilities

c.Council for Learning Disabilities

d.Division for Children with Communication Disorders

e.International Reading Association

f.The Orton Dyslexia Society

The result of the meeting was a theoretical statement specifying the delimited characteristics of conditions called learning disabilities. The proposed definition was not designed to set up operational criteria for identifying individual cases of learning disabilities, but to identify a theoretical base for the area. Critical elements of the proposed theoretical definition include the following:

a.Learning Disabilities is a generic term that refers to a heterogenous group of disorders

b.Manifested by significant difficulties

c.In the acquisition and use of listening, speaking, reading, writing, reasoning or mathematical abilities

d.These disorders are intrinsic to the individual and presumed to be due to central nervous system dysfunction

e.Even though a learning disability may occur concomitantly with other handicapping conditions (e.g., sensory impairment, mental retardation, social and emotional disturbance) or environmental influences (e.g., cultural differences, insufficient/inappropriate instruction, psychogenic factors)

g.It is not the direct result of these conditions or influences ("Joint Committee," 1980).

Processing Deficits. A third problem associated with the term "learning disabilities" involves identifying and assessing cognitive processing deficits. Presence or absence of this problem must be inferred from the behaviors of the student. These behaviors may include social and emotional adjustment, study skills, coping responses, or achievement levels, as well as test scores. A pattern or profile of behavior characteristics does not exist. LD students are a **heterogeneous** group.

Conceptual Framework. In spite of the controversy over what exactly are learning disabilities, and disregarding the debate over whether or not it is a valid diagnostic category, a program to provide service to these students must be grounded in some conceptual

framework. The underlying assumptions of such a program acknowledge the differences between LD students and the general college population. It strives to emphasize strengths rather than deficits, and takes the orientation of skill development rather than overcoming handicaps. Such a program advocates the rights of these students to access to institutions of higher education not out of compliance with legislation, but out of the awareness that LD students have significant contributions to make. In an educational setting, LD students are different primarily in learning style and in the kinds of accommodations needed to help them achieve, not necessarily in ability or in potential.

Characteristics. As suggested previously, one all encompassing profile of characteristics of university LD students does not exist. When speaking about deficits, the tendency is to itemize weaknesses rather than strengths, creating a negative tone. It should, however, be kept in mind that LD students often exhibit many positive attributes. Lists of both deficits and positive attributes will be provided.

One grouping of characteristics organized deficits into seven domains: cognitive, language, perceptual-motor, academic, work and study habits, social and affective. A listing can be found in Cronin, M.E. & Gerba, P.J., 1982.

The following list of characteristics was compiled by Clyde-Snyder (1982) and was used with university LD students. The most frequently noted items, especially those presented in self-reports, are identified by an *.

1.Short attention span.

2.Restlessness.

3.Distractability. (The student seems especially sensitive to sounds or visual stimuli and has difficulty ignoring them while studying).

4.Poor motor coordination. (This may be seen as clumsiness).

5.Impulsivity (Responding without thinking).

6.Perseveration. (The student tends to do or say things over and over. Mechanism that says "finished" does not work well).

*7.Handwriting is poor. (Letters will not be well formed, spacing between words and letters will be inconsistent, writing will have an extreme up or down slant on unlined page).

*8.Spelling is consistently inconsistent.

*9.Inaccurate copying. (The student has difficulty copying things from the chalkboard and from textbooks; for instance, math problems may be off by one or two numbers that have been copied incorrectly or out of sequence).

*10.Can express self well orally but fails when doing so in writing. In a few cases the reverse is true.

*11.Frequently misunderstands what someone is saying. (For instance, a student may say, "What?", and then may or may not answer appropriately before someone has a chance to repeat what was said previously).

*12.Marked discrepancy between listening and reading comprehension.

*13.Has trouble with variant word meanings and figurative language.

*14.Has problems structuring (organizing) time. (The student is frequently late to class and appointments. The student lacks a "sense" of how long a "few minutes" is opposed to an hour. The student experiences problems pacing him/herself during tests.)

*15.Has problems structuring (organizing) space. (The student has difficulty concentrating when in a large, open area, even when it is quiet. The student may

over-or under-reach when reaching or placing objects (depth perception).

*16.Has difficulty spacing an assignment on a page (e.g., math problems are crowded together).

*17.Thoughts wander and/or are incomplete in spoken and written language. Student may also have difficulty sequencing ideas.

*18.A student's hearing acuity may be excellent, but the processing of sounds used in words, or the sequence of what the student hears may be out of order (e.g., the student hears "aminal" instead of "animal" and may say and/or write "aminal").

*19.A student may have 20/20 vision but when processing visual information (e.g., pictures, graphs, words, numbers) the student has difficulty focusing his/her visual attention selectively. In other words, everything from a flyspeck to a key word in a title has equal claim on attention.

*20.Word retrieval problems (The student has difficulty recalling words that have been learned).

21.Misunderstands nonverbal information, such as facial expressions or gestures.

22.Very slow worker, but may be extremely accurate.

23.Very fast worker, but makes many errors and tends to leave out items.

24.Visual images. (Has 20/20 vision but may see things out of sequence, e.g., "frist" for "first", "96l" for "69l". A student may see words or letters turned around or upside down, e.g., "cug" for "cup", or "dub" for "bud", or "9" for "6", or "L" for "7", etc.)

25.Makes literal interpretations of what is said.

26.Judges books by their thickness because of laborious reading.

27.Has mixed dominance.

28.Moodiness, quick tempered, easily frustrated.

*29.Lacks eye contact. Feels uncomfortable when talking to others.

30.Has trouble answering yes or no to questions.

As stated previously, university LD students exhibit many positive attributes. These attributes contribute significantly to the student's success in a demanding environment. These attributes include the following:

1.Motivation

2.A strong desire to learn about personal strengths and weaknesses.

3.Compliance upon understanding of personal strengths and limitations.

4.An achievement orientation.

5.Cooperativeness.

6.A strong desire to please significant others in the academic, home and community environment.

**7.A willingness to commit large amounts of time and energy to academic pursuits.

8.Persistance "in spite of" or "in face of" failure.

Although there is considerable overlap among items in the above listings, and certainly the lists are not exhaustive, the items should prove beneficial in the process of identification and diagnosis of the university LD student. Behavioral characteristics add credibility to psychological reports and records and serve as an additional basis for classification/diagnosis.

Diagnostic Instruments. Based on Federal definition and regulations, students participating in the University program are identified by a series of diagnostic measures, such as tests of intelligence to determine the student's potential for success in a University curriculum, and tests of achievement to determine whether a potential/achievement discrepancy can be documented. A 40% potential/achievement discrepancy is considered an indication of a learning disabilty. Diagnostic instruments used include: the Wechsler Adult Intelligence Scale Revised, a measure of cognitive functioning and academic aptitude; the Woodcock-Johnson Psychoeducational Battery, Part Two, to obtain current levels of academic achievement in reading, mathematics, written language, and general knowledge areas; the Modern Language Aptitude Test, to measure abilities which have been cited in the literature as potential areas of deficit in LD populations and which is purported to assess abilities thought to be related to foreign language learning disability. Finally, a standardized written evaluation is administered. The following basic diagnostic battery used by the LD Project was selected to assess specific domains of functioning. A description of each of these instruments follows:

A BASIC DIAGNOSTIC BATTERY

1.Wechsler Adult Intelligence Scale Revised

2.Woodcock-Johnson Psychoeducational Battery, Part Two

3.Modern Language Aptitude Test

4.Written Sample

The following narrative will review each of the above listed tests and note the contribution of each of the assessment procedure.

The Wechsler Adult Intelligence Scale, Revised (WAIS-R) is used to assess the student's current level of intellectual functioning. In addition to yielding a full-scale intelligence quotient (FSIQ), this test yields a Verbal IQ (VIQ) and a Perormance IQ (PIQ). This test allows the examinee several ways to demonstrate their capabilities and the examiner gains evidence of specific domains of relative strengths and/or deficits. The VIQ is comprised of the scores earned on subtests constructed to measure verbal abilities. The PIQ, likewise, is comprised of scores on subtests to measure performance abilities. The theoretical underpinnings are a definition of intelligence that incorporates, in addition to the ability to reason abstractly and the ability to learn and to adapt, the understanding that intelligence is multifaceted and calls for a global capacity to comprehend the world and to deal effectively with its challenges.

Significant information can be gained by interpreting any statistically significant discrepancies between the VIQ and the PIQ. The examiner is then able to identify areas of strengths or deficit in either the verbal or the performance domains. The FSIQ must fall within the range of intelligence considered to be indicative of normal functioning in order for the student to be considered for services through the LD Project.

The Woodcock-Johnson Psychoeducational Battery, II: Tests of Achievement is administered to assess the current levels of academic achievement in the domains of written language, reading, mathematics and general knowledge. The Woodcock-Johnson is a criterion-referenced test which means that with scores on these various domains we are able to make comparisons of a student's performance with the performance of an age-appropriate comparison group.

Academic achievement is particularly important in the diagnosis of a learning diability.

Accurate appraisals of academic functioning are needed in order to substantiate a significant discrepancy between the current level of intellectural functioning and the level of academic achievement that would be predicted from the FSIQ.

The **Modern Language Aptitude Test (MLAT)** is adminisered to predict the probable success a student will experience when learning a modern foreign language. Certain subtests of this test have been shown to assess abstract reasoning ability.

Since universities typically have foreign language requirements, it is appropriate to assess a student's probable success in order to plan for tutoring and/or testing accommodations such as extended time limits, individual proctoring and possible alternative methods of testing such as responding to items into a tape recorder rather than in writing.

Standardized Written Sample A sample of student's writing is obtained as part of the assessment battery. This sample is administered under timed conditions and is an essay written on a prescribed topic. This sample is evaluated in terms of the student's ability to organize thoughts, develop the essay logically and make a strong, appropriate conclusion. Additionally, handwriting, spelling, grammar, vocabulary and punctuation are all assessed.

This sample of writing provides the examiner with information about how the student might be expected to perform during essay exams or when formulating other written products required at the university level. This information can be used both in planning for testing accommodations and in obtaining services such as tutoring or editing. (See Objective Four, Component C, written expression for a sample of a prescribed topic in written expression).

The above list includes a description of a basic battery of testing instruments which have been found useful in the diagnosis of a learning disability at the University level. Additional instruments and descriptions are discussed in the following section.

Alternate Methods of Assessment. Given the current definitions of learning disabilities and the extreme heterogeniety of the population of students considered LD, there seems to be no singular assessment battery that is most effective, efficient or appropriate for diagnostic purposes. Some researchers have emphasized the need to develop assessment measures designed specifically for adolescents and adults with learning disabilities.

The LD student who is in need of support services and special accommodations has severe basic skills deficits in reading, written language, especially spelling and/or in mathematical abilities. For the university LD student the most striking characteristic is the uneveness of their abilities which often is more exaggerated with maturity. The reason for these patterns seems to be that what they did well as children they seem to do exceedingly well as adults, perhaps as a means of compensation for areas of deficit, which become even more discrepant in adulthood. Assessment thus becomes a very complex task.

In light of these issues involved in identification of university LD students, assessment batteries have some commonalities and some differences. The primary question is "Does this student have the intellectual ability to do college work?" The WAIS-R is the most widely accepted measure used with the adult LD population. As noted previously, one significant characteristic of the LD students in college populations is average or above intellectual functioning. This test allows intra-individual comparisons to be made to identify any patterns of abilities or discrepancies as measured by the various subtests of the WAIS-R. The only common trait found among all LD students is a discrepancy between apparent ability to learn and actual academic achievement. Criterion- referenced tests have become increasingly popular methods for assessing educational strengths and weaknesses in the major content areas. Examples of achievement tests with good norms, validity and reliability that are age-appropriate for adults are the Wide-Range Achievement Test (WRAT) and the

Peabody Individual Achievement Test (PIAT). The WRAT assesses the domains of reading, spelling and arithmetic. The PIAT assesses math, spelling, general information and reading recognition and comprehension. Both tests are considered limited, screening instruments.

Assessment should also include those areas of functioning that have been identified as residual problem areas for LD adults. Often included are tests of reading skills, measures of receptive and expressive language, math reasoning and computation, personality, emotional maturity, career and vocational interest patterns. Frequently, some assessment is made of the student's study skills, motivation, and self-concept through an intensive interview. In some cases, the assessment can include tests of auditory and visual processing.

Colleges and universities generally do not recognize the need to universally screen incoming students in order to identify those who experience learning disabilities. The more stringent or competitive the admissions requirements, the fewer the numbers of LD students accepted, the higher their potential and less severe their basic skills deficits. The converse of this is also true. Perhaps eventually it will be in open-admissions institutions where information from universal screenings will become the necessary first step in identification of those students who are LD.

Informal Assessment. In addition to formal or standardized assessment instruments, a number of informal assessments are conducted. The heterogneous composition of the target population (i.e., LD students), means that there can be many variants to the nature of the disability not all of which are automatically identified through formal assessment. A common example is the "degree of structure" required in developing appropriate study skills for LD students. For some students this may mean a mere lack of awareness of how to use the library, while for others it may require daily monitoring of a variety of study activities.

Informal assessment helps not only to corroborate the findings of standardized formal

assessment instruments, but facilitates the development of individualized Education Plans by cueing in on individual student characteristics, such as study habits, time management, etc. It serves to individualize the intervention program by providing information on the "external constraints" within which any particular student must operate, such as a given course load, nature of course requirements, various test-taking situations, etc.

Experience with LD students indicates that students' input (such as their awareness or lack of awareness of how to study or participate in University level academic training) is a useful component of the diagnostic process as well as program planning. Students' input about themselves facilitates program execution by serving as an effective starting point for the various academic support strategies. For instance, if a student reports that his/her poor grade performance is not because of failure to understand the subject matter, but due consistently to lack of preparation, a time management program is indicated.

Informal assessment can be carried out through client-clinician interviews and questionnaires aimed at eliciting information on the individual's experience as an University student. Based on a review of currently available study guides, books, manuals, the following areas were identified as useful in providing diagnostic and strategy planning data:

1.Student's awareness of course requirements

2.Student's preparedness for course enrollment

3.Instructor-student contact information

4.Time management

5.Student's class attendance.

Questionnaires were developed for each of the above mentioned areas. Each questionnaire included a clinician's guide for the various response options. Informal assessment of this sort allowed program personnel to systematically record and utilize the

student's contribution towards assessment and program development.

The client-clinician interview serves as an informal forum for background information about each student's awareness or lack of awareness of his/her specific disability. It also helps to determine whether some or all of the questionnaires would be required for a given student. The following questionnaire in its entirety (or specific questions) may be used as a basic informal instrument followed by one of the above 5 listed materials (See Objective Three, Component B, "Staff Materials" for additional sample questionnaires.)

CLIENT-CLINICIAN INFORMAL ASSESSMENT

Have you attended college before? _____ YES _____ NO

If yes, what courses have you taken? _____

_____

_____

What skill areas do you considertobe weaknesses?_____

_____

_____

_____

What skill areas do you consider your strengths?_____

_____

_____

_____

List the long range goals you would like to achieve at Penn State.

_____

_____

_____

_____

_____

List the specific goals you would like to achieve this term.

_____

_____

_____

_____

The purpose of this program is to meet your individual needs. In what ways can this program assist you?

PLEASE ANSWER THE FOLLOWING QUESTIONS IN AS MUCH DETAIL AS YOU CAN.

1. Describe an ideal strategy for taking notes in class

2. Describe as accurately as you can the strategy you use (if any) to take notes in class.

3. Describe an ideal strategy for preparing for exams._____

_____

_____

_____

4. Describe an ideal strategy for completing an assignment such as a paper or a report.

_____

_____

_____

_____

_____

_____

5. Describe as accurately as you can how you typically prepare for assignments such as papers or reports._____

_____

_____

_____

_____

_____

6. Describe the strategies you use (if any) to organize your study time (on a daily and weekly basis). How much to you plan ahead? To what extent are you usually able to follow through on your plans?

_____

_____

_____

7. Describe how you will organize your notes, papers, and assignments for each course. For example, what kind of notebook will you use, how will you organize it, where do you plan to study, where do you keep your books, papers, etc.?

READ THE FOLLOWING SITUATIONS, THEN DESCRIBE IN AS MUCH DETAIL AS POSSIBLE WHAT YOU USUALLY DO OR THINK YOU WOULD DO IN EACH CASE. INCLUDE WHAT YOU SAY TO YOURSELF, HOW YOU RATIONALIZE YOUR DECISION AND WHAT YOU ACTUALLY DO.

1. It's Friday morning and you have a first period class. You were out late last night and you really don't think you are going to make it to class on time, even if you rush. As you debate with yourself whether or not to go, you remember that the class was supposed to be a review for the test on Monday.

2. You've developed a study schedule to prepare for an exam a week from today. You need to re-read and outline a chapter, then prepare a practice quiz on the material. It will probably take you three or four hours to finish. Some friends just called you and you really want to spend the day with them.

3. You have been studying for twenty minutes and you are really having difficulty concentrating. You feel tired, and start to think about taking a one-hour nap so you can concentrate better.

4. You have been working on an outline for a paper, but you haven't finished the objective you had set for the day, even though you have been working a half-hour more than you had planned. You really want to go home and watch a program on T.V.

Diagnostic Interpretation. Based on Federal definition and regulations, students participating in the University Program for L D students are identified by a series of diagnostic measures. (See Diagnostic Instruments above). A severe potential/achievement discrepancy is considered an indication of a learning disability. The following Tables One and Two respectively show a random selection of students referred for diagnostic evaluation at The Pennsylvania State University. Table One shows the percentile scores of students identified as L. D. Table Two shows percentile scores of students who were not identified as exhibiting a learning disability.

Table 1

Reason for Referral, WAIS-R, Woodcock-Johnson, MLAT Percentile Scores for Each of 10 Learning Disabled College Students

Subject	Sex	Reason for Referral	WAIS-R			Woodcock-Johnson				Modern Language					
			V	P	T	R	M	W	GK	1	2	3	4	5	T
1	F	Memory	96	63	90	92	90	86	88	2	1	61	23	5	5
2	M	English Writing	81	73	77	10	92	10	56	--	--	--	--	--	--
3	F	Reading Foreign Language	75	77	77	34	68	29	76	9	38	7	6	58	2
4	M	Math	84	87	88	27	10	26	60	63	9	61	3	19	12
5	F	Writing	77	68	75	21	69	36	55	--	--	--	--	--	--
6	M	Writing	63	91	81	53	68	18	60	--	--	--	--	--	--
7	M	Foreign Language	39	66	50	37	66	24	21	1	2	3	4	1	5
8	M	Foreign language	90	42	70	60	83	26	67	38	9	9	18	1	15
9	M	Test-Study	55	87	73	26	0	7	71	--	--	--	--	--	--
10	F	Study Skills	23	61	34	27	28	65	21	--	--	--	--	--	--

Table 2

Sex, Reason for Referral, WAIS-R, Woodcock-Johnson Percentile Scores for Each of Six Non Learning Disabled College Students

Subject	Sex	Reason for Referral	WAIS-R			Woodcock-Johnson			
			V	P	T	R	M	W	GK
1	F	Admission Ref	23	54	34	27	28	65	12
2	M	Writing Spelling	27	8	16	10	7	4	18
3	F	Shorthand	25	12	16	14	15	10	23
4	F	Academic GPA	80	98	98	58	72	90	98
5	M	Academic GPA	27	60	42	17	14	16	25
6	M	Writing	23	61	24	27	28	65	12

COMPONENT C: INTERVENTION

As stated previously, a program designed to serve university LD students must be founded on a theoretical base. Prior to a discussion of specific intervention procedures, a basic introduction to behavioral theory will be presented. Intervention procedures cited in this guide are based on this theoretical framework. (For additional information see Hallahan, Kauffman, & Lloyd 1985; Lerner 1985).

Behavioral Theory. The basic premise of behavioral theory is that by manipulating or controlling environmental variables target behaviors can be changed. These behaviors can be observed and measured. The principle of direct, continuous and precise measurement is essential to establish the efficacy of the treatment. Behavioral theory incorporates the method of behavior modification, or systematically controlling environmental events so that specific changes are produced in observable behaviors.

Behavior modification can be applied to educational events. Target behaviors are defined, observed, and continuously monitored. In this way, objectives and methods can be revised continuously until the most effective intervention has been determined. Only environmental factors which directly affect an individual's performance are identified, isolated and subsequently manipulated.

The application of behavior principles to academic learning has acquired increasing importance in the field of learning disabilities. Specific academic behaviors which can be directly defined and observed can be changed. The concern is not with innate abilities which are difficult to observe and define. This is essentially relevant when dealing with LD students because of the heterogeneity of the group and the difficulty of definition and classification of learning disabilities.

Another important aspect of behavioral theory in relation to the LD student is the

measurement of permanent products, such as class grades. Specific improvements or decreases in behavior are recorded by plotting observable products on a graph. The need for structure, which behavior modification provides, is essential for the LD population.

Behavioral theory is important for both conducting research and developing interventions for LD individuals. One purpose of behavior modification research is to discover what variables control the responses being measured. In an academic atmosphere, if these variables can be determined and controlled, then the learning environment can be manipulated in such a way as to improve the academic achievement of the individual. More research is needed in this area but some research has been conducted in specific areas of academic achievement which are problematic to LD students, most notably reading, arithmetic, written language (which consists of handwriting, spelling and composition), and oral language. Behavior modification and the use of token reinforcement and social reinforcement has been shown to be effective with school age children. As stated before, although the LD population is an extremely heterogenous group, certain common characteristics are found to be present among these individuals. Low self-esteem and self-confidence, due perhaps to repeated exposure to failure and underachievement, are common characteristics of LD students. For these individuals, social reinforcement can be a highly motivating modifer, as well as positive reinforcement from a significant other (i.e., tutor, parent).

As stated earlier, a program designed to provide services to university LD students should emphasize strengths rather than deficits. Identification of a student's positive attributes, such as motivation, cooperativeness and a desire to please significant others, is helpful when planning a student's individual program. These attributes can be utilized in

order to make each student's program as effective as possible. **SUCCESS** is a highly motivating factor.

IEP Development. Once an LD student is diagnosed, an Individualized Education Plan (IEP) incorporating behavioral objectives and appropriate support services is developed. The objectives and support services are founded on the student's diagnostic profile and take into account information from formal and informal procedures. An IEP is essential since the group of LD students is a heterogeneous one. IEPs include long-and short-term objectives, strategies for achieving each objective, and criteria for evaluating achievement of each objective. Procedures are based on behavioral theory, including: task analysis, positive reinforcement, contingency contracting, response cost, rehearsal and errorless learning. A sample IEP format and one showing behavioral objectives for an LD student in a meteorology course follows:

STUDENT INDIVIDUAL EDUCATIONAL PROGRAM

(IEP)

METEOROLOGY 303 WINTER TERM, 1981

Long Term Goal:

Student will achieve full-time status in a degree program by gradually increasing his credit load to eight credits or more per term while maintaining a grade point average of "C" or better.

Short Term Goal:

Student will achieve a grade of "C" or better in Meteorology 303 Winter Term, 1981.

Activities:

--attend all class lectures (20) and all laboratory sessions (10).

--specify in writing weekly study goals and assignments.

--specify daily study objectives: include time of day, material to be covered and specific strategies for studying.

--complete all reading assignments prior to the class period on which they are scheduled to be presented.

--complete all lab assignments one day prior to the specified due-date

--meet with lab instructor to review any problems or question the day before lab assignments are due, in order to avoid losing credit for errors on lab assignments.

--tape record lectures and later transcribe and refine notes.

--have someone else take notes from the tape recorded lecture, then compare class notes to them to evaluate note-taking skills.

--utilize consultant as a tutor for any course content for which assistance is needed.

--"teach" consultant or another student in the class any units covered in Meteorology 303.

--volunteer/actively participate in lab sessions.

--prepare for exams and quizzes several days in advance:

-identify material that will be covered on the exam (notes and book).

-reread the material.

-prepare a list of all terms, then define each and memorize the definitions.

-self-check mastery of the terms and definitions.

-prepare a practice test of sample items (using testing mode(s) to be used by the instructor--for example, multiple choice, essay).

-take the practice exam and then check it and review any items that were missed.

-prepare a list of questions on material you have problems with and meet with the instructor several days before the exam for assistance.

-organize/participate in a study group with other students in the class.

--review error patterns on exams when they are returned.

-meet with instructor or consultant to remediate errors.

SAMPLE BEHAVIORAL CONTRACT

	What	When	Evaluation	Due Date	Pts.
1.	set up reading schedule for course readings (___pg./day)	First Friday of term	permanent product-schedule	First Friday of term	
2.	complete daily reading objective for course	every week-day	checklist		
3.	outline material for daily reading assignment	every week-day	permanent product-outline		
4.	make vocabulary list from reading	every week-day	permanent product-list		
5.	attend all class lectures	Tuesdays & Thursdays	check class notes which should be dated		
6.	memorize vocabulary from readings and class notes	every week	student writes definitions from memory with 90% accuracy, set up weekly meetings.		
7.	meet with instructor to outline class paper/project	set a specific date	permanent product-outline of paper/project		
8.	prepare rough draft of paper/project and meet with instructor to review draft	set a specific date	permanent product-rough draft OKed by instructor		
9.	earn a "C" or better on paper/project	last day of class	permanent product-check grade		
10.	earn a "C" or better in course	last day of class	permanent product-check grade		

Evaluation of Objectives: Consultant will meet once a week with student. At this time the consultant will randoml
(5) assignments which were scheduled for the preceding week. Assignments which are adequately completed earn o
Any assignment not completed or adequate earns one (1) "-" each. At the end of the term, each "+" will earn fou
towards the independent study course grade and each "-" earns a loss of ten (10) points.

Sample IEP Components. Academic support services incorporated into IEPs have included: (a) alternative methods of evaluation such as untimed tests, readers on objectives tests, separate testing with a proctor, essay exams in place of objective tests, taped examinations, etc.; and (b) special accommodations , including: the use of tape recorders, dictaphones, recording services for the blind (or readers on short notice), time management and study skill training, and orientation sessions. Sample IEP components incorporating classroom accommodation, alternative forms of evaluation, career counseling, mental health, self-management and study skill objectives follow:

SAMPLE IEP COMPONENTS

Sample IEP #1:

Component 1:	Classroom Accommodation
Example: I. c1)	use of tape recorder to tape class lectures
Component 2:	Alternative Forms of Evaluation
Example: 2. a)	Untimed and proctored testing conditions; when method of evaluation is essay composition, she will dictacte her essay answers into a tape recorder.
Component 3:	Career Counseling
Example: 2. c1)	"Discover," the computer-based guidance system in the Career Development and Placement Center.
Component 4:	Mental Health
Example: 4 a,b,c,d,e,)	Will continue to be involved in counseling with this clinician as it is directly related to academicissues. Topics to be included are: a) self-concept and self-efficacy b) motivation c) values clarification d) psychosexual development e) independence/dependence issues
Component 5:	Self Management
Example: 3. b)	She will continue to receive assistance with daily living skills. Some examples are managing her own finances, making trips alone off-campus to make purchases and for recreation.

Component 6: Study Skills

Example: 1. d) Will receive further instruction in the principles of time management in order to maximize her study time and perhaps to decrease the numbers of hours spent in daily class preparation.

Sample IEP #2:

Component 2: Alternative Forms of Evaluation

Example: 2 a) Will receive untimed testing conditions, especially when the method of evaluation is essay composition.

Components 4 and 5: Mental Health & Self Management

Example: 3) Should collaborate with the clinician in the development of a research design to be implemented in the Fall 1985 semester. Suggested areas of investigation are:

a) improving reading speed and comprehension

b) techniques for overcoming the effects of aphasia.

Environment and Roles. IEPs are created by a team of individuals. Team members may include: graduate students in school psychology and special education, school psychology and special education supervisors, and the LD student. Figure One shows the roles of the LD student and team members in a continuum of intervention programs. Since each LD student is different in the severity of his/her disability, a continuum of intervention from the most structured to the least structured has been designed. A few students require a **highly structured intervention approach.** Within this paradigm, the student and some team members meet on a daily basis. Highly specified objectives are checked and progress is closely monitored. At this level of service, a great deal of effort is devoted to

developing effective study skill and self-management strategies. In the **least structured approach,** the student initiates all activities and the team members reinforce or support the student's request for assistance. For example, the student may have approached an instructor and was denied a request for modified testing arrangements. A team member will then contact the instructor with supporting documentation for the necessity for such an arrangement.

THE ROLES OF THE STUDENT AND TEAM MEMBER IN THE CONTINUUM OF INTERVENTION PROGRAM

LD COLLEGE STUDENT'S ROLE	INTERVENTION TEAM MEMBERS' ROLE	EXAMPLES
Meeting regularly with team to check behavioral contract (Most Structured)	Reinforce objectives adequately completed.	Student is reinforced for completing highly specified objectives.
Request tutoring or special assistance when needed.	Suggest techniques for remediating or compensating for skill deficits. May suggest methods to monitor progress.	Student requests tutoring. Team member locates and adapts materials to facilitate learning.
		Student and team member work to remediate academic skill deficits
Select and implement specific strategies and activities for study skills and time management improvement.	Suggest specific self-management and study skills strategy.	Team member describes alternative for modifying student exam taking strategies. Student selects program and implements condition reliably.
		Student or team member provides reinforcement when program is reliably followed.
Maintain maximum independency by initiating all activities (Least	Reinforce appropriate requests for assistance. Reinforce	Student is reinforced for contacting team member to tutor

Structured)	independent problem solving.	prior to exam. Student is reinforced for independently requesting assistance from course instructor.

The following items should be included in each LD folder:

1. Informed Consent Form

2. Intake Interview - Be sure to include student's SS#

3. Test Protocals - WAIS-R, WOODCOCK-JOHNSON, MLAT, WRITING SAMPLE

4. Psychological

5. I.E.P.

   A. List of Semester Objectives

   B. List of Weekly Objectives (including activity, date, materials, evaluation, criteria)

   C. Semester and weekly schedule

   D. Annecdotal and objective report of each student - clinician contact - include date, time objectives, observations

(STUDENT STATUS FORM)

Roles and Responsibilities of the Student and Team Members

A. Intake Interview

1. Project Director and Student

a) Following a referral, the Project Director interviews the student to decide if the referral is appropriate.

1) Intake Questionnaire is completed.

b) If the referral is appropriate, the Director describes the program's objectives and services to the student.

c) Following this interview, the Project Director assigns the referral to one of the program's graduate assistants, who contacts the student to set up an appointment for testing.

B. Assessment

1. Clinician and Student

a) The clinician individually administers the following diagnostic instruments to determine if a significant discrepancy exists between the student's potential and achievement:

1) Weschler Adult Intelligence Scale-Revised

2) Woodcock-Johnson Psychoeducational, Part II
Tests of Achievement

3) Modern Language Aptitude Test

4) Writing Sample

The student is informed of the purpose of these measures, what the

results will be used for, and who will have access to the information.

C. **Case Study Psychology Report**

1. Clinician and Project Director and/or Project Supervisor

a) The clinician evaluates and writes up the results of the assessment. Together with the Project Director and/or Supervisor, they decide if a learning disability exists, and recommendations are made. This is formally written in a pyschological report and once approved, is signed by the clinician, the Project Director and the Project Supervisor. The student is given a copy and one goes in the student's file.

D. **Feed-Back Session**

1. Project Director, Clinician, and Student

a) The clinician and Project Director review the psychological report with the student, addressing any concerns and answering any questions. The conclusions and recommendations contained in the report are emphasized. The student is informed of the specific services the Program can offer to him/her, and a tentative course of action is decideed upon.

E. **Initial Intervention Session**

1. Clinician and Student

a) The student decides to make a commitment to the program. The clinician once more explains the purposes of the program and the

services offered to the student. The clinician discusses issues of confidentiality.

1) The clinician reads and has the student sign the Informed Consent Form.

b) Once the student makes a commitment to participate in the program, the clinician discusses what responsibilities the student has to the clinician, to the program, and to him/herself.

1) Client-Clinician Contractual Agreement is carefully read, then signed.

c) The student expresses his/her expectations of the program to the clinician, and together they decide on long-term goals and short-term objectives for the semester, and what efforts will be expended to achieve those goals. They decide on the number of sessions needed per week, and a suitable meeting time is set up for the semester.

F. <u>Writing the IEP</u>

1. Clinician

a) The clinician formalizes the long-term goals, short-term objectives, and the support services for the student that were decided upon at the initial inter-vention session. The clinician writes these up in behavioral (measurable) terms in an IEP format containing the objectives, the conditions, thebehavior and the criteria of success. This is put in student's file.

G. **Succeeding Intervention Sessions**

1. Clinician and Student

a) Additional information often needs to be gathered regarding the student's academic responsibilities and his/her capabilities in the areas of self-management and study skills. Some forms that may be used (at the discretion of the clinician) to identify potential areas of intervention include the following

1) **Preparedness for Course Enrollment** - provides information about the suitability of the student's course selection, the courseload, and other commitments. It may indicate that a rescheduling of courses is necessary.

2) **Awareness of Coures Requirements** - prompts the student to focus on the policies and requirements of the courses he/she is taking.

3) **Course Evaluation Inventory** - focuses on gathering information on particular courses. It can be used to determine if a course is suitable for the student at that time.

4) **Class Attendance Questionnaire** - clarifies the student's attendance habits. It may signal a need for intervention.

5) **Time Management Questionnaire** - gathers information on the student's perception of time available versus time needed for study, to get a desired grade in each course and identifies some qualitative aspects of his/her study habits. It may indicate a need for time management intervention.

6) **Daily Schedule for Time Management** - divides the weeks into one-hour blocks of time, which are filled in at the beginning of the week with academic (and non-academic) activities. The clinician may need to monitor the extent to which the student follows the planned schedule.

7) **Instructor-Student Contact Questionnaire** - prompts the student to identify specific sources of help with his/her courses. It may indicate weak study skills and exam preparation habits that can become a part of the intervention program.

b) The clinician implements the intervention components in an appropriate manner to facilitate the attainment of the goals and objectives for the student.

c) The clinician can guide the student in taking advantage of the University's academic support services available to them as LD students. Depending on their disability, special learning accommodations and alternative methods of evaluation are recommended. The student may choose to approach their instructor personally, or give him/her a letter from the Project Director and/or the Director of the Office for Disability Services that specifies the student's particular learning disability and outlines the learning/testing accommodations that are suggested. The student may use this letter to "break the ice" when approaching the instructor; in addition, it often lends credibility to their claims. (Refer to the form letter in the Material section).

d) The clinician may act as a resource person and advise the student of the University-wide services available to them as registered students. Some of these have included: career counseling, vocational testing, learning assistance programs (specific course tutoring), psychological counseling, remedial programs, use of computers, mental health services, and so on.

H. Session Reports

1. Clinician

a) After each session, the clinician writes the objectives for the session, and then records the events of the session, any pertinent observations and any other relevant information.

1) The clinician records this information on the Student Status Form.

I. Weekly Staff Meeting

1. Project Director, Project Supervisor, and Clinicians

a) The clinicians update the rest of the program's staff on the progress of each of his/her clients. Concerns and problems are raised in both academic and the socio-emotional areas. The entire staff offers input to collectively decide on a course of action. General concerns and issues are also addressed at this time (e.g., extended clinician training). The Project Director summarizes the status of each client for the record.

b) Specific staff sessions are held from time to time. These are specific

presentations by outside personnel in areas that staff indicated a general need, usually to aid and/or enhance their performance when dealing with clients (e.g., an orientation to the services offered through the University's Career Development and Placement Center, a training session on professional client-clinician interpersonal inter-actions, etc.)

Evaluation. The evaluation of the first objective **The Development of a Comprehensive Diagnostic and Academic Support Service Program** should be of two kinds: process and output (or product evaluation.)

Process evaluation is appropriate for assessing a program while it is underway. Process evaluation allows a program to be assessed and modified using data from the program and its participants. The advantage of process evaluation is that it provides feedback to the project staff and participants so that they can shape the model to their objectives soon after its beginning. This type of evaluation is facilitated by the following:

A. Intake Information

B. A psychological case study on each project participant along with testing protocols.

C. An IEP for each LD student.

When appropriate, each IEP incorporates single subject research design techniques. For example, a multiple baseline design modifying a student's time management and study skills with appropriate inter-ventions is charted. The resulting data verify the

success or failure of the remedial strategy.

D. An anecdotal summary of each contact with each LD student.

In addition, a summary of the following quantifiable data should be collected at the end of each academic term or semester for each L.D. student:

A. Credit hours attempted.

B. Credit hours earned.

C. Credit hours earned toward graduation.

D. Grade point average.

E. Cumulative average

F. Courses dropped and reason for dropping them.

G. Remedial courses taken.

H. Non-credit hours taken.

Product evaluation, or output evaluation, is a yearly audit of the program. Results are examined in comparison to program objectives. The assessment of the effects in comparison to program objectives. The assessment of the effects of the program upon the participant is determined by the reported success of each LD student's university experience (maintaining at least a 2.0 G.P.A. on a 4.0 scale). In addition, a questionnaire such as the following completed by each participant on his/her last contact with the program is suggested.

STUDENT QUESTIONNAIRE

A. Please answer the following:

1. What was the reason you were referred/referred yourself to this program?

_____

_____

2. In what ways did you think this program could be of help to you?

_____

_____

3. Were your expectations met? _____. Please explain:

_____

4. How long were/have you been involved in this program?

_____

5. If you dropped out, or decided not to participate, why?

_____

6. What kind of assistance did you receive from this program (<u>what</u> was done to help you with <u>which</u> courses)?

Activity	Course
_____	_____
_____	_____
_____	_____
_____	_____

7. What was the most beneficial thing you gained from participating in this program?_____

_____

8. Was there additional assistance that you felt you needed?

If yes, please explain._____

_____

9. Do you feel that you needed the assistance offered by this program?_____

10. Would you recommend this program to other university LD students?_____

11. Do you have any suggestions for improvements to the program:

a) for all university LD students_____

_____

b) in your case_____

B. Please respond by checking one of the following:	Not at All	Somewhat	Mostly	Greatly	Don't Know
1. Did the tests given to you (at the beginning) accurately explore your strengths and weaknesses?					
2. Did the tests accurately pinpoint your area(s) of weakness?					
3. Was the report written by the clinician accurate?					
4. Were the results of the tests clearly explained?					
5. Was it clearly explained what the program could do for you and what the program recommended?					
6. Did the program accurately identify your needs?					
7. Did our recommendations and activities help meet your needs?					
8. Did you follow our recommendations?					
9. Did our recommendations/activities help you: a) get better grades b) study more efficiently c) take better notes d) use your time more efficiently e) complete course requirements f) improve your confidence g) other:_____					
10. Was the help given to you sufficient in dealing with your area(s) of weakness?					
11. Was the amount of time spent with the clinician sufficient?					
12. Was the scheduling of sessions satisfactory?					

	Not at All	Somewhat	Mostly	Greatly	Don't Know
13. Do you feel that the clinician met his/her responsibilities to you?					
14. Do you feel that you met your responsibilities to the clinician?					
15. Did you feel that your input was valued and taken into consideration?					
16. Do you feel confident that the program kept all information regarding your disability confidential?					
17. To what extent did you receive assistance in one or more of the following areas?					
a) time management					
b) study skills					
c) note-taking					
d) course scheduling					
e) getting classroom/testing accommodations					
f) meeting coursework requirements					
g) arranging for career and/or personal counseling					
h) other:_____					

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CHAPTER TWO

CONDUCTING AWARENESS AND INFORMATIONAL ACTIVITIES FOR ADVISORS, FACULTY, COUNSELORS AND OTHER STAFF

Awareness and informational activities for pertinent University personnel are a must if the needs of LD students are to be accommodated. Each faculty and staff member should be alerted to the fact that LD students are attending their institution and that adjustments will have to be made in order to accommodate this handicapping condition. Reaching each faculty and staff member, however, is not an easy undertaking. One recommendation included in this section of the manual outlines the establishment of a University wide LD Advisory Committee and the identification of LD academic advisors in each discipline. In addition , staff development and faculty awareness activities are presented. The section ends with a number of University wide considerations that will be faced by program developers.

COMPONENT A: UNIVERSITY ADVISORY COMMITTEE

IDENTIFICATION A university program for LD students must take into consideration the concerns and needs of students, faculty and the administration of various colleges and departments. Identification of these concerns and needs can be accomplished by the establishment of an advisory committee consisting of interested faculty, administrators and students. Membership on the committee can be either self-initiated or by invitation. At The Pennsylvania State University, members of the Advisory Committee were identified by

contacting the local chapter of the Association for Citizens with Learning Disabilities. A member of this organization included a university LD student who knew which members of the organization were also affiliated with the University (including a number of Penn State staff with LD children). Several of these people were contacted by the student who described the concept of the Advisory Committee, and asked for their participation. To this core group, a number of other professionals were added. The Committee presently consists of persons who have strong personal or professional interest in the area of learning disabilities.

Roles. Responsibilities of the Committee may include the following:

A. Assist the staff employed by the Office for Disability Services, or the Office of Handicapped Services, in setting priorities for the improvement of services for LD students.

B. Identify problems in the provision of services and recommend possible solutions. Solutions might involve changes in University policy, identification of University resources, or purchase of equipment (such as word processing programs for computer use).

C. Monitor statistics on the number of LD students enrolled at Penn State and their academic majors.

D. Meet at least once each semester.

COMPONENT B: Academic Advisors

Identification. Many advisory committees will suggest the identification of academic advisors who are interested in working with LD students. In addition, LD students consider good advising an important component to their academic success. Advisors can be identified by contacting each college Dean by telephone, explaining the purpose of LD advisors, answering any questions about the nature of learning disabilities, and sending a follow-up letter explaining the advisors role in detail. Deans of Colleges are especially interested in the number ofstudents enrolled in their programs, data on the percentage of students who successfully complete their college education and the types of accommodations that will have to be made. The Dean of each college is in the best position to supply names of advisors for each college, and in some cases for each major within a college.

Roles. Responsibilities of LD advisors across disciplines may include the following:

A. Assistance with course selection.

B. Advise on number of credit hours to be taken per semester.

C. Advise on drop and add options.

D. Advise on how to approach a professor with a specific request. (Might involve some role-playing).

E. Alerting other faculty as to the nature of the student's disability and giving an explanation of necessary accommodations.

F. Identifying departmental resources or services which can be used by the LD student. (availability of computers, tutors, etc.)

G. Initiate long-term or projected advice on course selection for students who need taped texts, note takers, or readers on short notice.

H. Advise the student on how to arrange for alternative forms of evaluation.

COMPONENT C: Staff Development

Advisory staff development. At least once a year prior to the beginning of the fall semester an orientation session for members of the University Advisory Committee and for academic Advisors is recommended. At this meeting commercially available presentations such as the Temple University module on learning disabilities may be shown, and published phamplets about learning disabilities or University publications addressing the LD student can be made available to each participant. Additional components may include an explanation for the need for specific advisors, a presentation on available University services or programs and a question and answer period.

Following the orientation session each LD student can be given the name of a faculty member in their particular department or college who is somewhat knowledgeable about learning disabilities.

Program staff development. A workshop for project staff should be held prior to the beginning of each semester. (See following sample of a workshop outline). This session gives the staff the opportunity to learn about or review the goals of the project, the legal mandates, the assessment and intervention procedures and the general operating policies

of the program. In addition, specific staff development needs can be identified and arrangements made for additional staff meetings. Adjunct personnel from the areas of mental health, medicine, career and education counseling, developmental year, learning center, vocational rehabilitation, veteran administration, and psychology can be called upon to present pertinent information. Areas to be addressed may include the following:

A. Career planning and job seeking objectives for LD students.

B. How to identify the signs of severe emotional problems (e.g., characteristics associated with depression, anxiety, or the possibility of bodily harm, injury or even suicide.)

C. How to avoid client-clinician dependency.

D. The availability of financial assistance.

E. Types of clinics or workshops available at the university (e.g., test anxiety clinic, etc.)

F. Library and Learning Center services.

In addition to inservice workshops, regular weekly staff meetings should be scheduled in order to share up to date information on each LD student's progress through the program, and when necessary receive staff input on successes and failures of IEP objectives and intervention procedures.

The following figure presents a sample outline of a staff developmetal workshop.

SAMPLE OUTLINE OF A STAFF DEVELOPMENT WORKSHOP

1. Program Overview:
   - History
   - Objectives
2. Legal Base:
   - Section 504
3. Intake:
4. Assessment:
5. IEP Development:
6. Record Keeping:
7. Identification of Staff Development Needs:
8. New Student Assignments:
9. Research:
   - Library - Study Skills
     - Memory Training
     - Spelling, Vocabulary
     - Self Management
   - Written Expression
   - Foreign Language
   - Single Subject Design
10. Miscelaneous:
    - Schedule Meeting once a week
    - Tutors

Extension or Branch Campus. Most major universities have several branch or extention campuses which serve LD students. Inservice workshops or staff development sessions for service providers at these locations should not be neglected. The following sample inservice workshop can be adapted for this purpose.

INSERVICE OUTLINE

I. What is a learning disability?

- A. Definition
- B. Behaviors that might indicate a learning disability
- C. Incidence of learning disability
  - a) in general population
  - b) in college-age population
  - c) at Penn State

II. How do LD students get into college? (Discussion oriented to Penn State admissions)

- A. Legal mandate of nondiscrimination - Section 504
- B. Admission guidelines for LD students

III. Establishing a comprehensive program for LD students

- A. Elements of a comprehensive program
  - a) identifying recources
  - b) enlisting cooperation of faculty and administration
  - c) forming a planning team

d) obtaining support services

e) evaluating program

B. How Penn State has established its program - Penn State recources, policies,services provided.

IV. Overview of the Model Program for LD Students at University Park

A. Diagnostics

B. Support Services

C. Remediation/Intervention

D. Videotaped interviews with LD students

E. Case studies of some students

We will provide opportunity for questions and discussion.

Handouts will be provided, including a list of resources.

Faculty Awareness. Faculty understanding and awareness of the problems experienced by LD students will contribute significantly to the success of any university program designed to serve these students. A major activity in accomplishing this objective may include a University sponsored presentation by a known expert in the area. In addition, a faculty awareness survey such as the following developed at the University of Nebraska is useful in evaluating the extent of faculty commitment, awareness and understanding of the area

Postsecondary Intervention Model for Learning Disabilities

A Faculty Survey

The Postsecondary Intervention Model for Learning Disabilities Personnel (University of Nebraska-Lincoln) developed a survey to assess faculty attitudes and knowledge specific to LD students. The survey was modeled after one used by Dorothy Tiede (Whitewater, Wisconsin) to assess postsecondary personnel attitudes toward persons with disabilities. Considerable modifications were made by the PS IM LD personnel to 1) address only the area of learning disabilities, 2) incorporate attitude and knowledge subscales, 3) shorten the form to 32 items, and 4) expand the response format and demographic section. Face and content validity of items was obtained by having ten professionals in the areas of special education and research review the instrument. Items were rewritten based on the comments received from the ten professionals. Demographic items were selected on the basis of available research on factors reported as being significant to faculty attitudes and knowledge of disabled persons. At present (1985-86) the survey is undergoing statistical analysis for reliability and validity. Based on the statistical analysis, the survey will be revised for future use and used as a basis for the design of faculty inservice. For specifics as to the progress of the survey analysis, contact Mary Morris, Jan Leuenberger, Donna Aksamit at the University of Nebraska-Lincoln.

Code_____

FACULTY SURVEY

Background Information

1. Faculty Rank: T.A. ____ Instructor ____ Asst. Professor ___
Assoc. Professor ____ Full Professor ____ Other_____

2. College _____ 3. Department:_____

4. Sex: M__ F__ 5. Primary Student Contact: Grad___ Undergrad___ Both___

6. Previous interaction with persons known to have a learning disability. Yes___ No___
If yes, check type:: professional ____ personal ____

7. Acquired information about learning disabilities. Yes___ No___
If yes, check type: reading ___ media ___ coursework ___ other ___

8. Primary job responsibility: Teaching __ Research __ Administration __
Advising __ Other _____

9. Length of postsecondary teaching experience: 0-5 years___ 6-10 years___
11-15 years___ 16-20 years ___ over 20 ___

Survey Items

Read the statements below and respond by circling the one response which best represents your opinion using the following scale:

1 = Strongly Agree
2 = Agree
3 = Tend to Agree
4 = Tend to Disagree
5 = Disagree
6 = Strongly Disagree

	Strongly Agree	Agree	Tend to Agree	Tend to Disagree	Disagree	Strongly Disagree
1. It is unfair to spend more money educating learning disabled students than other students.	1	2	3	4	5	6
2. A person's learning disability affects all aspects of his/her life.	1	2	3	4	5	6
3. Classroom environments are enriched by the presence of learning disabled students.	1	2	3	4	5	6
4. Learning disabled persons tend to feel sorry for themselves.	1	2	3	4	5	6

	Strongly Agree	Agree	Tend to Agree	Tend to Disagree	Disagree	Strongly Disagree
5. Learning disabled people have fewer employment opportunities than other adults.	1	2	3	4	5	6
6. I believe that teaching learning disabled students could be very rewarding.	1	2	3	4	5	6
7. I feel uncomfortable around disabled people.	1	2	3	4	5	6
8. Learning disabled persons are also mentally retarded.	1	2	3	4	5	6
9. All of us are disabled to some degree.	1	2	3	4	5	6
10. Learning disabled people take more from society than they give back.	1	2	3	4	5	6
11. Learning disabled people should be exempt from some postsecondary graduation requirements.	1	2	3	4	5	6
12. Unique problems exist for each learning disabled student which must be carefully taken into account for the learning process to be successful.	1	2	3	4	5	6
13. Few learning disabled students will succeed in college.	1	2	3	4	5	6
14. A learning disabled student wanting to pursue a professional career should be discouraged from doing so.	1	2	3	4	5	6
15. Having learning disabled students in the classroom takes away from the quality of education other students receive.	1	2	3	4	5	6
16. It is acceptable to spend additional funds to make this university accessible to learning disabled students.	1	2	3	4	5	6
17. Learning disabled students should not be considered handicapped.	1	2	3	4	5	6
18. Learning disabled students often are perceived as irresponsible when in reality the problem may be a result of poor organization.	1	2	3	4	5	6
19. Poor writing and spelling skills are frequent problems faced by learning disabled students.	1	2	3	4	5	6
20. This university has special programs for learning disabled students.	1	2	3	4	5	6

	Strongly Agree	Agree	Tend to Agree	Tend to Disagree	Disagree	Strongly Disagree
21. Learning disabled students should be allowed to utilize taped books, notetakers and/or untimed tests.	1	2	3	4	5	6
22. To be realistic, postsecondary education standards should be different for learning disabled students.	1	2	3	4	5	6
23. Poor academic performance of learning disabled students is most likely a result of study habits.	1	2	3	4	5	6
24. I can recognize a learning disabled student.	1	2	3	4	5	6
25. I know <u>when</u> to provide assistance to learning disabled individuals in my class.	1	2	3	4	5	6
26. Support services for learning disabled students at the postsecondary level tend to delay development of self-reliance and independence.	1	2	3	4	5	6
27. An adapted education program for learning disabled students may not eliminate academic failure.	1	2	3	4	5	6
28. It is possible to effectively teach a learning disabled person at the college level.	1	2	3	4	5	6
29. I know <u>how</u> to offer assistance to learning disabled individuals in my class.	1	2	3	4	5	6
30. I know where to refer learning disabled students for help at this university.	1	2	3	4	5	6
31. Learning disabled students at the postsecondary level are protected from discriminatory educational practices by federal law.	1	2	3	4	5	6
32. Learning disabled students with reading problems often are slow readers and have difficulty with comprehension.	1	2	3	4	5	6

Additional Comments:

PLEASE FOLD AND STAPLE SO THAT THE "PS IM LD" RETURN MAILING LABEL IS VISIBLE.
THANK YOU!

COMPONENT D. University Considerations

Admissions. Each University has its own admission requirements. Most major Universities require a high school diploma, entrance examinations (such as the SATs), grade point average and or class rank and an interview. Under mandate, admission personnel cannot solicite information concerning an applicant's handicapping condition and each LD student must follow the regular admission procedures. It is left up to the student to determine whether he/she should alert the Admissions Office of a specific disability and what accommodations need to be made.

Testing. The following narrative is an excerpt from the Heath Resource Center Clearinghouse on Postsecondary Education for Disabled People publication. (1985) The narrative describes high school equivalency examinations and college testing services for learning disabled students.

1. HIGH SCHOOL EQUIVALENCY. Persons with learning disabilities who wish to take the high school equivalency exam can obtain special accommodations and editions of the exam through the GED (General Educational Development) Testing Service. The Chief Examiner must be provided with professional verification of the disability. Special editions include braille, large print and audio cassettes. Special accommodations include additional time, quiet surroundings, low-glare lighting, etc. The fact that the test was taken under special conditions generally will not be included on the student's record. For more complete information, contact the State Department of Education in your state.

2. COLLEGE TESTING SERVICES. Persons with learning disabilities may obtain, if necessary special accommodations and/or editions of either of the two most commonly used admissions/placement tests - the Scholastic Aptitude Test (SAT) provided by the Admissions Testing Program of the College Board and the American College Testing

(ACT) Assessment. Extended time, cassettes, readers, large type, and marking assistance are among the special arrangements permitted. These requests should be made well in advance of the exam date. The details of what is involved in special testing varies between the two testing services. Of particular

importance is whether or not the fact that the test is taken under nonstandard conditions is noted on the student's records. The SAT notes any test taken under nonstandard conditions. The ACT makes no reference to special testing unless extended time was used. Students, parents and counselors may want to talk this over and decide whether or not the disability warrants special testing. For some students it may be worth the investment to take the test both ways. For complete details about special testing and other tests provided by the two testing services, contact:

A. ATP Services for Handicapped Students
CN6602
Princeton, New Jersey 08541
(609) 734-3867

B. The ACT Assessment-"Special Testing Guide"
Test Administration
P.O. Box 168
Iowa City, Iowa 52243
(319) 337-1332

Critical Issues. It is crucial to the continued success of any learning disability program to have strong support from the university administration. Evidence of the number of LD students, types of accommodations and services needed, and documentation of success and failure should be available upon demand.

One critical issue which is and will be faced by most University LD programs involves the issue of part-time vs. full-time attendance for LD students. At most universities, students take 12 to 18 credits to have full-time status. Full-time status entitles students to health services, financial aid and other student services. For many LD students, a course load should not exceed 6-9 credit hours. (OFTEN A FULL-TIME LOAD FOR A STUDENT WITH A DISABILITY). Their degree may take 6-8 years to complete. Administrative support is essential in obtaining the extension of full-time students benefits to LD students who are working at their "full-time" pace but who officially are considered part-time students. In addition, this issue does not end with a change of University requirements. Many part-time students are also not eligible for a number of other service agency benefits.

CHAPTER THREE

Guidelines and Materials for Faculty, Staff Students and Parents

This section of the manual includes a compilation of materials which have been either cited in various phamplets or publications, or developed by programs serving the University LD student. The inclusion of various lists, forms, and guidelines under specific components is arbitrary. Many of the materials cited under one category are pertinent across categories. For example, the list of alternative evaluation procedures is included under Component A (Faculty Materials), however, the staff involved with a University program as well as students and parents may find a need for such a list. It is left up to the readers of this manual to determine which of the materials are relevant for their use.

COMPONENT A: Faculty and University Staff Materials

I. Materials for faculty and University staff should initially include a short description of Learning Disabilities and a listing of accommodations that may be requested by the student. This short description should be sent to each faculty member, administrator and service staff at least once a year. A sample follows:

LEARNING DISABILITY

Learning disabled college students usually have average or above average intelligence with perceptual, conceptual, or coordinative disorders. Mild to severe difficulties in reading, speaking, listening, calculating math, or relating socially may be present.

As individualized educational programs are developed in secondary schools,

greater numbers of students with learning disabilities are experiencing educational success. Students who may have dropped out or failed in high school in the past now see college attendance as a realistic possibility. These students will look to institutions such as Penn State to continue the kind of supportive services that enable them to compete educationally.

University adaptations for Learning Disabled students will be requested more frequently. Because this is a relatively new area, experience with successful modifications is limited. Learning Disabilities are so individualized that generalizations about classroom adaptations are of limited value.

In any case of Learning Disability, the student should be asked to clarify the exact nature of the disability and the degree to which it may interfere with the usual requirements of study. Arrangements may be made for services such as tape-recorded textbooks, volunteer tutoring, modification of test administration, or course substitutions (when essential program areas are not involved).

II. Materials including a short description of LD program and auxilliary University services should be available upon request. The follow sample materials describing The Pennsylvania State University Program were distributed to interested faculty, parents and students.

LD MATERIALS

Funding for a Comprehensive Model Program for Learning Disabled Penn State students has been awarded to Penn State's Department of Special Education by the U.S. Department of Education. Starting December 1, 1984, the following services will be available to Learning Disabled college students, who are matriculated in a Penn State degree program: (a) identification and diagnosis; (b) individualized education plans; (c) assistance with study skills, course selection, compensating strategies, etc; (d) subject area tutoring; and (e) assistance with arranging modified testing accommodations.

The program combined with exisiting services available through the Office of Disabled Student Services, provides a comprehensive level of service for learning disabled students who have been identified and those in need of diagnosis. Faculty, individuals involved with learning disabled college students, are encouraged to refer them to the program--CEDAR Building--after December 1, 1984, or call the Project Director, Dr. Anna Gajar at (814) 863-2438, 9:00-3:00 Monday thru Friday. Assistance and information on advising learning disabled students will also be available.

Update on the availability of services for Learning Disabled Students at The Pennsylvania State University, University Park Campus

Funding for a Comprehensive Model Program for Learning Disabled College Students has been awarded to Penn State's Department of Special Education by the U.S. Department of Education. Starting December 1, 1984, the following services will be available to Learning Disabled college students, who are matriculated in a Penn State degree program:

1. Identification and diagnosis.
2. Based on diagnostic information the development of an individualized education plan.
3. Assistance with study skills, course selection, compensating strategies, etc.
4. Subject area tutoring.
5. Assistance with arranging modified testing accommodations such as oral testing, individualized testing, extended time testing periods, etc.

Students who have been diagnosed as Learning Disabled or students who require diagnosis should contact the Learning Disability Program, CEDAR Building, after December 1, 1984, or the Project Director, Dr. Anna Gajar, at (814) 86302438, 9:00-3:00 Monday thru Friday.

Based on funding, students will be served on a first come, first serve basis.

STUDENTS WITH LEARNING DISABILITIES

Penn State is interested in all academically qualified students regardless of handicapping conditions. In terms of learning disability, we seek to enroll students who can complete college level courses with the help of support services and classroom accommodations.

We do not offer a formal program for students with learning disabilities. All students attend the same classes, but some students (including many with learning disabilities) choose to make use of supportive services offered through regular University channels. Some services currently available include:

1. TIPS - information and referral service on audio recordings.
2. Individual tutoring and/or help with development of study skills.
3. Audiotaped textbooks and other course materials.
4. Course substitutions (when essential program areas are not involved).
5. Modification of test administration.
6. Individual counseling.
7. Library assistance in locating materials.

Specific assistance aimed at compensating for the disability area(s) is provided for some students at the University Park Campus by Dr. Anna Gajar. Dr. Gajar teaches the learning disability course at the University Park Campus in the Special Education Department. Although extremely interested in provision of supportive services, her time and personnel resources are limited.

Whenever possible, the Admissions Office prefers to have no information prior to the admission decision as to handicapping conditions.
Questions concerning supportive services may be addressed directly to the Coordinator of Services for Disabled who will respond confidentially. With this approach, the University is assured of non-discrimination in its admissions decisions and of compliance with federal regulations.

Non-standard administrations of the Scholastic Aptitude Test are available from the Educational Testing Service and are considered by Penn State on the same basis as standard administrations.

Due to the fluctuating nature of learning disabilities and the uneven availability of supportive services at the secondary school level, some students feel that their grades and SAT scores do not adequately reflect their potential. These students often choose to provide our Admissions Office with information about their disabilities and potential to succeed with supportive services. While we do not encourage this approach, the Admissions Office will consider information voluntarily provided as it relates to the admission decision.

III. The following texts and publications may be recommended:

Ballard, J. Public Law 94-142 and Section 504 - Understanding What They Are and Are Not Reston, VA: The Council for Exceptional Children, 1977.

This publication uses a question and answer format to provide a wealth of valuable information about PL 94-142 and Section 504 of PL 93-113, much of it applicable to the postsecondary setting.

Barbaro, F. (1982) The LD college student: Some considerations in setting objectives. Journal of Learning Disabilities, 15, 10, 599-603.

This article describes a model based on Adelphi University's LD college program, which provides direct intensive instruction to enhance psychosocial growth within the college environment. The program is a response to references to social interpersonal skill deficits reported in LD students.

Barbaro, F., Christman, D., Holzinger, S.M., & Rosenberg, E. (1985). Support services for the learning disabled college student. Social Work, 30, 1, 13-18.

In developing its program for learning disabled students, Adelphi University chose an interdisciplinary approach, utilizing special education teachers and social workers to meet the variety of needs presented by th students. Ecological perspective was the organizing principle, recognizing evolving interrelationships between individuals and their environments. A case study is included.

Birely, M. & Manley, E. (1980). The learning disabled student in a college environment: A report of Wright State University's Program. Journal of Learning Disabilities, 13(11), 7-10.

Blalock, J.W. (1981). Persistent problems and concerns of young adults with learning disabilities. In W.M. Cruickshank & J.M. Kliebhan (Eds.), Early adolescence to early adulthood: The best of ACLD. (Vol. 5), Syracuse University Press.

Brown, D. "Counseling and Accommodating the Student with Learning Disabilities." In P. Marx (Ed.), The Handicapped Student on College Campuses - Advocacy, Responsibility and Education. Proceedings of third national conference of Association on Handicapped Student Services Programs in PostSecondary Education, Denver, 1980, pp. 149-153

This article provides a concise explanation of types of learning disabilities experienced by learning disabaled adults and of ways to work with these difficulties through both counseling and necessary accommodations.

Brown, D. Steps to Independence for People with Learning Disabilities. Washington, DC: Closer Look, 1980, Parents' Campaign for Handicapped Children and Youth, Box 1492, Washington, DC 10013.

This pamphlet holds a wealth of information about definitions and diagnosis of learning disabilities and about ways learning disabled individuals can work together with other people who are significant in their lives toward the desired goal of personal independence. It is a must for anyone working with learning disabled individuals.

Clary, L.M. (1984). The Application of Study Techniques with Learning Disabled Adolescents. In W.M. Cruickshank & J.M. Kliebhan (Eds.), Early adolescence to early adulthood: The best of ACLD (Vol. 5). Syracuse University Press.

Decker, T.W., Polloway, E.A., & Decker, B.B. (1985). Help for the LD college student. Academic Therapy, 20, 3, 339-345.

College programs must become responsive to the needs of LD students. Specific recommendations for intervention oriented to common problems are discussed.

Dooley, D. & Palmer, M. (1984). A liberal arts college learning skills program. ED 249 707.

Describes a program to serve college students with varied skill levels and learning styles. Recommendations on process, instruction, faculty training, community involvement and learning skills programs are outlined.

Fischer, L.S. & Page, H. (1984). A new approach to LD programs in Postsecondary education.ED 249 702.

The report describes a diagnostic prescriptive program directed toward the full integration of students with learning disabilities into the regular program of the University of Colorado at Boulder.

Hallahan, D.P., Kauffman, J.M. & Lloyd, J.W. (1985). Introduction to Learning Disabilities, 2nd ed. Prentice-Hall, Inc., Englewood Cliffs, New Jersey.

Houck, C.K. (1984). Learning Disabilities: Understanding Concepts, Characteristics and Issues. Prentice-Hall, Englewood Cliffs, New Jersey.

Kahn, M. (1980). Learning problems of the secondary and junior college learning disabled students: Suggested remedies. Journal of Learning Disabilities, 13(8), 445-449.

Kirk, S.A., Senf, A.M. & Larson, R.P. (1981). Current Issues in Learning Disabilities. In W.M. Cruickshank & A.A. Silver (Eds.), Bridges to Tomorrow: The best of ACLD (Vol. 2), 1-16. Syracuse University Press.

Lerner, J. (1985). Learning Disabilities: Theories, Diagnosis & Teaching Strategies. 4th ed. Houghton Mifflin Company, Boston.

Magrum, C.T. & Strichart, S.S. (1984). College and the learning disabled student: A guide to program selection, development and implementation. Orlando, FL: Grune & Stratton, Inc.

McKinney, J.D. & Feagans, L. (eds.), (1983). Current topics in learning disabilities. (Vol. 1). Ablex Publishing Corp.

Meyers, M.J. (1985). The LD college student: A case study. Academic Therapy, 20,4, 453-461.

A case study to clarify critical issues related to the LD adult's special problems and needs.

Minner, S. & Prater, G. (1985). College teacher's expectations of LD students. Academic Therapy, 20,2, 225-229.

University teachers hold negative academic expectations for LD students and are pessimistic about their ability to teach them.

Moss, J.R., & Fox, D.L. College-Level Programs for the Learning Disabled. Tulsa, OK: Partners in Publishing, 1980.

In addition to a partial list of schools providing special programs for learning disabled students, this book provides a comprehensive treatment of the legal aspects of the learning disabled problem and of ways colleges can help these students. It also provides a valuable resource of communication with other postsecondary institutions in order to learn from their expertise and experience.

Putnam, M.L. (1984). Postsecondary education for learning disabled students: A review of the literature. Journal of College Student Personnel, 25, 1, 68-75.

The scarcity of college programs for learning disabled students is attributed to cost, attitudes, unawareness, and lack of data on incidence and characteristics. To comply with legislation, colleges must accommodate special students.

Rosenthal, I. (1985). A career development program for learning disabled college students. Journal of Counseling and Development, 63,5, 308-310.

Career counseling of the Learning Opportunities Center of Kingsborough Community College is discussed. The model program's goal and strategies are outlined. Purpose of the program was to 1) demonstrate that LD students can survive in college if

offered an array of support services; 2) disseminate information about the project. Aspects considered important for study and treatment were cognition and attention; reality testing; sense of self; visual imagery; and learned helplessness.

Siegel, Dorothy. "Help for Learning Disabled College Students," American Education, 15 (July 1979), 17-21.

Describes the Learning Opportunities Center set up at Kingsborough Community College to bring emotional, social, and learning satisfaction to LD college students. Services include individual and small-group tutoring, counseling, direct classroom intervention, faculty orientation and consultation, and bypass techniques, faculty workshops and ways to get faculty informally, social get-togethers, a student "hot-line" for study problems, intake conferences, tutoring and diagnosis.

Smith, L.M. (1980). The College Student with a Disability: A Faculty Handbook.

Strichart, S.S., & Mangrum, C.T. II (1985). Selecting a college for the LD student. AcademicTherapy, 20, 4, 475-479.

LD students can survive in college if they carefully choose a facility that provides the support they need to realize their potential. Support would include testing, special advisement, remediation of skills, special courses, counseling and tutoring services.

Tarver, Sara G. "Viewing LD at the University Level," Focus on Exceptional Children, (Fall, 1979).

Outlines an approach used at University of Wisconsin-Madison to setting up a program for LD students. Eight LD students outlined their program needs and contributed special services or equipment needs, and lists a 3-pronged approach to establishing a

program: 1) guidelines for identifying a diagnosing, 2) provision of special equipment and services, and 3) education of faculty and staff.

Vogel, S. & Sattler, J. The College Student with a Learning Disability: A Handbook for College and University Admissions Officers, Faculty, and Administrators. Illinois Council for Learning Disabilities, 1981.

Vogel, S. (1982). On developing LD college programs. Journal of Learning Disabilities, 15, 9, 518-528.

Implications of Section 504 of the Rehabilitation Act of 1973 and pressure from concerned LD adolescents and parents are discussed in terms of identifying college LD students; planning programs; identifying and coordinating resources; training staff; and implementing services.

Washington, M.H. (1981). A comprehensive approach to addressing and remediating learning disabilities in learning disabled college students.

IV. The following list of classroom accommodations for Learning Disabled students (based on a similar list for high school students in **Marsh, Gearhart and Gearhart, 1978**), and a list of possible evaluation modifications, may be distributed.

REGULAR CLASSROOM LD ACCOMMODATIONS

1. **Course Objectives:** Give list of objectives and requirements to students, major requirement, exam dates, types of assignments and outside reading sources. This is helpful for students with organization or memory problems.
2. **Course Salvaging:** Let the student and the LD program staff know when the student is falling behind, preferably this should be done early in the semester.
3. **Lecture Outlines:** Many special students have trouble with organizing thoughts, and taking notes - also picking out relevant information. A simple lecture outline is helpful. These outlines will also assist the student when preparing for examinations - helpful to program staff when attempting to identify the study skills necessary for a specific course or for peer tutors.
4. **Technical Vocabulary:** Each subject has a specific vocabulary, a handbook of relevant or technical words would be extremely helpful for use again by the LD student, the LD staff members or peer tutors.
5. **Abstract Concepts:** Difficult for regular students. A printed or taped summary of key concepts or theories would be extremely useful.

6. **Oral and Written Reports:** Allow LD students with writing problems to record reports, allow for editing and typing. Allow two grades, one for content and one for mechanics.

7. **Homework:** Possibly coordination between classes to reduce written load would assist the LD student.

8. **Study Skills:** What are the pertinent study skills for the subject matter? A list of these would assist the LD student, e.g., in this course pay attention to charts and graphs.

9 **Reading Rate:** Inform the class as to how they should approach their reading materials, e.g., this material should be skimmed, this material requires slow reading, etc.

MODIFYING EVALUATION PROCEDURES FOR THE LEARNING DISABLED

1. Allow for untimed tests.
2. Allow a reader for students on objective exams.
3. Provide essay instead of objective exams for some.
4. Allow student to take an exam in a separate room with a proctor.
5. Allow for oral or typed exams.
6. Allow students to clarify questions and rephrase them in their own words as a comprehension check before answering exam questions.
7. Analyze the process as well as final solution (as in math problems).
8. Allow alternative methods of demonstrating mastery of course objectives.
9. Allow students to use a multiplication table, simple calculator, and/or secretary's desk reference in examinations.
10. Avoid double negatives, unduly complex sentence structure, and questions embedded within a question in composition examination questions.
11. Provide adequate scratch paper and lined paper to aid those students with overly large handwriting and/or poor handwriting.
12. Provide alternative to computer scored answer sheet.

V. The following is a listing of good pedagogical techniques and procedures which can be followed by faculty who serve the learning disabled student. The list is extracted from a transcript of a lecture given as part of the Gettysburg College January Term Lecture Series, in January 1985, by Elissa L. Fisher, Ed.M.

FACULTY CLASSROOM TECHNIQUES AND PROCEDURES

1. Typing all handout material for classes.
2. Leaving more space between lines for printing.
3. Making sure that clear directions are given orally and then in writing.
4. Using manuscript rather than cursive writing on chalkboards.
5. Chalkboards should be cleaned regularly.
6. Stand away from windows when lecturing.
7. Close doors to classrooms.
8. Minimize outside noises in warm weather, where possible.
9. Invite learning disabled students to sit in the front of the room.
10. Isolate critical reading materials for special projects in the library so that they are readily available.
11. Give time in class for questions and feedback.
12. Stick to dates given in the syllabus; learning disabled students have a difficult time adjusting to unexpected changes.
13. Avoid undocumented assumptions about unusual behaviors.
14. When a student asks a question you have just answered, avoid expressing annoyance.

15. When a student does not get the information the first time, repeat it distinctly or ask if they need it in a different form.

16. Organize your lectures so that comments follow in a logical sequence.

17. Avoid going off on tangents from the lecture outline.

COMPONENT B: LD Program Staff Materials

I. The materials listed under Component A: Faculty and University Staff Materials, should be made available at the first program staff meeting.

II. Procedures and LD student folder contents, as outlined in the first part of this manuscript should be discussed and materials such as the Intake Form, Informed Consent, etc. distributed.

III. A format for writing an Individualized Education Plan and samples of final comments on the accomplishment of long term objectives follow:

L.D. COLLEGE PROGRAM

INDIVIDUALIZED EDUCATION PLAN

STUDENT NAME:

DATE IEP WRITTEN:

CLINICIAN:

SEMESTER OBJECTIVE ONE:

SHORT TERM OBJECTIVES FOR ONE:

EVALUATION (INCLUDE TERMINAL BEHAVIOR, CONDITIONS & CRITERION)

DATE DUE:

SEMESTER OBJECTIVE TWO:

SHORT TERM OBJECTIVES FOR TWO:

EVALUATION, ETC.

The IEP should be based on the results of a psychological evaluation and written with LD student input and agreement.

INDIVIDUALIZED EDUCATION PLAN FINAL SUMMARY

January 15, 1985 through May 9, 1985

Clinician

Long-term Objective

1. X will continue her studies at The Pennsylvania State University.
   a) X will continue a G.P.A. of at least 2.0
   b) X will continue to receive academic tutoring as a service provided through the Academic Assistance Center, Boucke Bldg.
   c) X will continue to utilize her current methods of studying which include:
      1) use of tape recorder to tape class lectures
      2) seating in the front of the room to facilitate recording and lip reading when possible
      3) obtaining copies of class notes from other students
      4) receive recorded books through Recordings for the Blind or through Dean Ness's office, Pattee Library.
   d) X will receive further instruction in the principles of time management in order to maximize her study time and perhaps to decrease the numbers of hours spent in daily class preparation.
2. X will continue to receive services through the L.D. Research Project. These services are to include:
   a) Untimed and proctored testing conditions; when method of evaluation is essay composition, she will dictate her essay answers into a tape recorder.
   b) X will continue her instruction in the use of the word processor under the

guidance of _____, Wagner Bldg.; she will begin by learning the touch-typing method, then progress to software packages for instruction and for fun.

c) X will explore career options. Resources here include:

1) "Discover," the computer-based guidance system in the Career Development and Placement Center, Boucke Bldg.

2) The Occupational Directory of titles and job descriptions.

3) College/university catalogs with alternative program and/or curricula, especially those suited to her talents and abilities.

3. X will continue to be stimulated and encouraged to become increasingly more autonomous.

a) She will continue to be involved in therapy. Options for individual counseling will be explored by the clinician, investigating both on-and-off-campus resources.

b) She will continue to receive assistance with dailing living skills. Some examples are managing her own finances, making trips alone off-campus to make purchases and for recreation.

c) She will receive specific instruction in social skills training. Some resources here include rehearsal opportunities, video taping, and computer software packages.

d) She will be encouraged to continue to volunteer her time to the Anthropology Museum on PSU campus, where there are creative outlets and the possibility of making friends of similar interests.

e) She will be encouraged to make more friends, male and female, devoting more time to leisure activities.

f) She will be encouraged to decrease her dependency on her mother, perhaps by decreasing the numbers of contacts through daily phone conversations and regular weekend visits.

4. X will continue to be involved in counseling with this clinician as it is directly related to academic issues. Topics to be included are:

a) self-concept and self-efficacy

b) motivation

c) values clarification

d) pyschosexual development

e) independence/dependence issues

SUMMARY OF AN INDIVIDUALIZED EDUCATION PLAN

May 7, 1986

Clinician:

X semester has been punctuated with crises, more on the personal than on the academic level. It is expected that she will conclude this semester (Spring 1985) with a 3.0 G.P.A.

She has registered for classes for the Fall 1985 semester through the advisement of Dr. _____, Chairman of the Anthropology Department. She will be taking 8 credit hours, which is an increase of 2 credit hours over this semester. _____ and _____ agree that my recommendation about this increase will be followed. That agreement is that if at any point

in the semester, it becomes apparent that _____ is experiencing inordinant levels of anxiety and stress, one course known as the "contingency course" will be dropped. This contingency course is one of the 3 credit hour anthropology courses she will be taking.

Progress has been made in the area of gaining more autonomy. _____ is much more responsible for her own life than in January, she has gained in assertiveness and self-expression and she is learning about conflict resolution and social interactions among her dorm-mates.

In summary, _____ level of functioning in January 1985, when she first became involved with the L.D. Project, and level of functioning in May 1985, indicate that growth and progress have occured. There have been, however, sharp constrasts between the high and the lows of this semester.

Recommendations for next semester include those listed on her psychological. In addition, it is recommended that a vocational goal statement be formulated based on the determination of the L.D. Project of whether _____ will obtain a degree from PSU and if so, specifically how this is to be accomplished. This vocational goal statement should also include an evaluation of her potential
to be employable. This vocational goal statement is to be formulated by the clinician after meeting with personnel in the Occupational and Vocational Rehabilitation Office, CEDAR Bldg.

Additonally, it is recommended that the clinician explore the possibility of CAPS continuing to provide therapy for _____. If an arrangement can be made with CAPS, it is recommended that the clinician meet with _____, her current therapist, to plan an approach to treatment that would coordinate the efforts of CAPS and the L.D. Project.

INDIVIDUALIZED EDUCATION PLAN - FINAL SUMMARY

January 23 through May 9, 1985

Clinician:

Long Term Objective

1. _____ will continue her studies at The Pennsylvania State University, expecting to graduate in May of 1987 with a degree in elementary education.

2. _____ will continue to receive services through the University's L.D. Project. These services are to include:

   a) _____ will receive untimed testing conditions, especially when the method of evaluation is essay composition.

   b) _____ will continue to receive instruction in the use of the word processer under the direction of _____. After her typing skills are honed, appropriate software packages will be used to improve her writing and spelling skills.

   c) _____ will continue to meet weekly with the clinician to discuss concerns, track her academic progress and to coordinate her involvement with the Project.

3. _____ should collaborate with the clinician in the development of a research design to be implemented in the Fall 1985 semester. Suggested areas of investigations are:

   a) improving reading speed and comprehension

   b) techniques for overcoming the effects of aphasia

   c) a study of metacognition

SUMMARY OF AN INDIVIDUALIZED EDUCATION PLAN

May 7, 1985

Clinician:

_____'s semester has been successful. It is felt that the assistance she received through the L.D. Project was beneficial to her, most notably in obtaining untimed testing, training in word processing skills and the support of the clinician. Her level of functioning at this time is improved over that of January, however, _____ was not in need of radical changes.

It is recommended that her involvement with the L.D. Project continue and that she be challenged through the development of a research project/design. If this is not done, it is felt that _____ will not be challenged nor motivated to stay involved with the Project.

IV. The following forms can be utilized by the L.D. clinician for informal assessment, and for development and implementation of IEP objectives.

CLASS ATTENDANCE QUESTIONNAIRE

1. Fill in your course schedule in the chart below:

PERIODS

2. List the place and room number for each of your courses.

Course	Building	Room #

3. Check the most appropriate response.

* I always, usually, sometimes, never, attend all class lectures.

_____ _____ _____ _____

*Mark **USUALLY** only if classes are missed due to specific emergencies, such as medical, bad weather, etc. If missed for other non-emergency reasons, check **SOMETIMES**

4. Do you attend non-lecture classes (such as films, presentations, demonstrations, etc.) if any?

(1) Always ____ (2) Usually*____ (3) Sometimes ___ (4) Never ___

5. Do you attend pre-exam review classes, scheduled during non-class hours, if any?

(1) Always ____ (2) Usually*____ (3) Sometimes ____ (4) Never ____

6. Do you attend post-examination discussion classes, if any?

(1) Always ____ (2) Usually*____ (3) Sometimes ____ (4) Never ____

7. Do you attend tutorial/discussion/group sessions, etc., if any?

(1) Always ____ (2) Usually*____ (3) Sometimes ___ (4) Never ____

8. Do any of your course instructors have specific attendance requirements (e.g., percent of grades will depend on class participation)?

Yes ____ No ____

If yes, explain

_____

_____

9. If you miss a class lecture, do you try to make a copy of the missed notes?

(1) Always _____ (2) Sometimes _____ (3) Rarely _____

10. Do you arrive on time for all your classes?

(1) Always ____ (2) Usually*____ (3) Not very often ____ (4) Never ____

Any additional information that you would like to mention_____

_____

11. If you miss an exam/quiz, do you try to contact the instructor and take a make-up option?

(1) Always ____ (2) Sometimes ____ (3) Never ____

CLINICIAN'S GUIDE TO
CLASS ATTENDANCE QUESTIONNAIRE

QUESTION	COMMENTS
1,2	These two questions help to clarify for the clinician that the client is prepared to attend classes. The client knows where to go and when. In checking on client's class attendance, the clinician will need to know the client's course schedule
3	For this question, a response other than **Always** or **Usually**, calls for intervention by the clinician.
4,5,6,7	For all these questions, an response other than **Always** or **Usually**, requires clinician to intervene. The intervention can vary from a mere suggestion or a complete behavior modification strategy.
8	This question helps to clarify for both the client and the clinician, if there is any attendance related grading for any course. If that is indeed the case, the clinician will need to be extra careful about the client's class attending behavior.
9,10,11	For these questions, any response other than **Always** or **Usually** calls for clinician intervention.

COURSE EVALUATION INVENTORY

Name:

Semester:

Course:

Meeting Time:

Instructor:

A. Course Requirements

For a grade:

___ tests
___ homework
___ papers
___ oral presentations
___ labs
___ outside projects
___ class attendance
___ class participation
___ other:_____

To do well:

___ homework
___ required reading
___ outside reading
___ labs
___ class attendance
___ class participation
___ comprehensive class notes
___ other: _____

B. Tests

1. Number:____
2. Type:

___ multiple choice
___ fill-in (word or phrase)
___ true/false
___ short answer (few sentences)
___ essay

___ in-class
___ take-home
___ open-book
___ close-book

___ computation/problems

___ other:_____

3. Tests cover material from:

___ text(s)

___ assigned outside readings

___ class notes

___ home work

___ labs

___ other:_____

4. Is the final comprehensive: ___Yes ___No

5. Do the tests build on one another: ___Yes ___No

6. Tests require a lot of:

___ memorization of facts

___ understanding of ideas

___ comparison of ideas

7.Comments:_____

_____

C. Instructor Rating

1. availability outside of class time

2. willingness to talk to students

3. helpfulness when approached

4. willingness to give extra credit projects

5. lecture style:

a. speed

b. organization

c. clarity of information

d. makes information interesting

6. willingness to accept late assignments

7. willingness to give make-up tests

D. Assigned Reading

1. amount required per class

2. amount required per test

3. clarity of information

4. ease of reading

5. interest level

E.

Course Requirement	Due Date	Percent of Grade
1.		
2.		
3.		
4.		
5.		
6.		
7.		

INSTRUCTOR - STUDENT CONTACT QUESTIONNAIRE

1. List the instructor's/teacher assistanct's (T.A.) office hours (day & time) for each of your present courses.

COURSE	OFFICE HOURS
_____	_____
_____	_____
_____	_____
_____	_____

2. Do any of the instructor's/T.A.'s office hours clash with your other regular course timings?

YES___ NO___

If YES, explain_____

_____

3. List the names of counselors/advisors with whom you can talk in case you have any difficulty with a course.

_____ _____ _____

_____ _____ _____

4. List the names and phone numbers of at least one student who is enrolled in each of your courses, who you can talk to in case you have any questions with respect to that course.

COURSE	STUDENT'S NAME	PHONE #
_____	_____	_____
_____	_____	_____
_____	_____	_____

5. Do you make it a point to meet with your course instructor/T.A. during office hours, to clarify doubts?

   a. whenever you need clarification _____

   b. just before the exam or quizz _____

   c. never meet with instructor/T.A. _____

6. In talking to the instructor/T.A. to clarify doubts regarding the course content, do you prepare in advance the questions to be asked?

   ALWAYS___ SOMETIMES___ NEVER___

7. Do you meet with any instructor/T.A./tutor, etc. on an "individual basis" to go over any questions that you may have about your exam/quizz performance?

   ALWAYS___ SOMETIMES___ NEVER___

8. In talking to the instructor/T.A. about exams, check your response to the following types of inquiry, whenever these have not been clarified in class:

   a. Ask about what percent of exam questions are from notes and what percent from the text book.

   b. Ask to check about the "contents" for that particular exam.

   c. Ask if there are any sections/topics which are especially important for that particular exam.

   d. Ask about the type of exam questions (e.g., multiple choice, true-false, etc.)

   e. Ask if any previous sample test questions are available.

CLINICIAN'S GUIDE TO

INSTRUCTOR - STUDENT CONTRACT QUESTIONNAIRE

QUESTIONS	COMMENTS
1,2,3,4	Responses to these questions provide information that the clinician can use in planning skills intervention strategies. It is also an indication of the client's overall "preparedness" for his/her courses.
5	Response to this question, is indicative of the client's study habit. Depending on individual circumstances, the clinician uses this information to advise the client about study skills. It is a "good" study practice to clarify doubts as and when they arise.
6,7	The response to these questions should be ALWAYS.
8	The response to all the subsections of question 8 should be YES.

TIME MANAGEMENT QUESTIONNAIRE

1. Deciding how much you want to study

   On the following lines list your present courses, the grade you THINK YOU CAN ACHIEVE, and the number of hours you will need to study each week to earn that grade.

COURSES	GRADE I WANT	WEEKLY STUDY HOURS
_____	_____	_____
_____	_____	_____
_____	_____	_____
_____	_____	_____

Total week study hours: _____

2. Determine how much time you have to study

   a. Fill in the following activities (approximately) in the time management chart, given below:

      1) attending classes
      2) meals
      3) sleeping
      4) dressing & grooming
      5) traveling
      6) household activities
      7) relaxing
      8) non-academic (socializing, club/church activities, sports, etc.)
      9) working (job)
      10) studying

TIME	MON	TUES	WED	THUR	FRI	SAT	SUN
8-9							
9-10							
10-11							
11-12							
12-1							
1-2							
2-3							
3-4							
4-5							
5-6							
6-7							
7-8							
8-9							
9-10							
10-11							

2b. What is the total number of hours per week you have AVAILABLE for studying, based on the above chart?_____

3. Do you have a fixed place(s) of study?

YES____ NO____

If YES, explain where_____

4. Do you have any "best time of the day" when you like to study (e.g., late at night/early morning)?_____

5. List 4 of your most common distractions, during studying (e.g., phone call from friend, T.V. shows, etc.)

_____ _____

_____ _____

6. Do you have any plan/strategy which helps you decide what to study for each day (e.g., completing home assignments, daily review of class notes, etc.)

YES_____ NO_____

If YES,explain_____

_____

_____

_____

CLINICIAN'S GUIDE TO
TIME MANAGEMENT QUESTIONNAIRE

QUESTIONS	COMMENTS
1	This question is aimed at providing the clinician with an indirect estimate of the client's perception of his/her capabilities. Depending on the student's response and his/her past test performances, study counseling may be required.
2	This question helps to focus on the possibility of study time management. Both the client and clinician can calculate if the number of hours needed (wanted) to study actually matches the number of hours available for studying. If it doesn't, rescheduling of study time or activity load is called for.
3,4	These questions provide information useful in setting up a study time chart. A time management plan which schedules "survey of text chapter" at 8 a.m. for someone who isn't really awake before 9:30 a.m. is doomed to failure.
5	The clinician can use this information to check if the client thinks of these as factors beyond his/her control. These distractions can be consciously controlled by the client and the clinician can suggest precise ways of doing so. Of course, each client will be an individual case.
6	If the client has no specific study plan or a random haphazard study plan, the clinician will need to advise the client on goal setting, priority ordering, etc.

PREPAREDNESS FOR COURSE ENROLLMENT

1. Have you decided on your major area of study?

   YES____ NO____ DON'T KNOW____

   If yes, state major_____

2. Did you consult with your academic advisor about the courses you are currently registered in?

   YES____ NO____

   If no, how did you decide on these courses?_____

   _____

3. Have you completed your Baccalaureate Degree Requirements (BDR)?

   YES____ NO____

4. Are your current courses related to your MAJOR/BDR requiremenst?

   YES____ NO____ DON't KNOW____

5. How many credits are you currently registered for?_____

6. Do you have any previous background (basic knowledge/prior experience) with these courses?

   YES____ NO____

   If yes, explain_____

   _____

7. Do you talk to instructor/friends, etc. before start of semester to find out course details (such as, nature of course, type of exam, textbooks, etc.)?

   YES____ NO____ RARELY____

   If yes, explain_____

8. Do you usually get the required textbook(s)/other course material before the first day of classes?

YES____ NO____ RARELY____

9. If textbook is not immediately available, do you make alternative efforts to get it (library, friends who took the course etc.) before classes start?

YES____ NO____ RARELY____

10. Are you aware of any areas of academic strength or weaknesses that you may have?

STRENGTHS	WEAKNESSES	DON'T KNOW
_____	_____	_____
_____	_____	_____
_____	_____	_____

11. Besides courses, list any non-academic activities (sports, church, club, etc.) that you may be involved in.

_____ _____

_____ _____

12. Approximately how many hours per week will these other commitments take?

_____

13. Do you think you can handle your present course load given any other commitments that you may have?

YES____ NOT SURE____

14. List the courses, credit load and hours of all the courses you are presently registered for.

COURSES	CREDITS	HOURS/WEEK
_____	_____	_____
_____	_____	_____
_____	_____	_____

CLINICIAN'S GUIDE TO

PREPAREDNESS FOR COURSE ENROLLMENT

QUESTIONS	COMMENTS
1	If the response to this question is NO or DON'T KNOW, client may need academic counseling in how to select a major.
2,3,4,5,6,7	The response to these questions provide information about how the client selects courses, i.e., whether he/she is organized in his/her approach or haphazard and blindly follows any advise. Depending on individual responses, the clinician can use this information to provide additional nformation to the client about course selection. (It is preferable to have this completed before the start of classes.)
8,9	The response to these questions should be YES.
10	The client should be able to fill in the responses to this question. If not, the clinician will have to re-explain the results of the educational assessment.
12,13,14	Using a rule of thumb, which claims 3 hours of study are required for every 1 hour of course lecture, the clinician can use the information from these questions to see, if the client has set attainable goals for himself/herself.

AWARENESS OF COURSE REQUIREMENTS QUESTIONNAIRE

1. What is your current student status?

   _____

2. Do you have a copy or have looked at the requirements for your curiculum or program of study, i.e., BDR Bulletin?

   YES_____ NO_____

3. For which of the courses you are now taking did the instructor give you printed information about its requirements?

   _____ _____

   _____ _____

4. For which of the courses you are now taking did the instructor not inform you of the course requirements?

   _____ _____ _____

5. Do any of your course instructors have a policy of giving lower grades for assignments that are turned in late?

   YES_____ NO_____ DON'T KNOW_____

6. Do any of your course instructors have a policy of not accepting LATE assignments?

   YES_____ NO_____ DON'T KNOW_____

7. Do any of our course instructors have a policy of giving more difficult make-up tests than those given on regular scheduled days?

   YES_____ NO_____ DON'T KNOW_____

   If YES, explain_____

8. Do any of your course instructors have a policy of giving a failing grade to students who are absent on test days?

YES____ NO____ DON'T KNOW____

If YES, explain_____

9. Briefly summarize how your final grade will be determined for each of your present courses.

	COURSE	HOW FINAL GRADE IS DETERMINED
1.	_____	_____
		_____
		_____
2.	_____	_____
		_____
		_____
3.	_____	_____
		_____
		_____

10. For each of your courses, list any extra credit or any other exam make-up options that the instructor may have told you about.

	COURSE	OPTIONS
1.	_____	_____
		_____
		_____

2. _____ _____

_____

_____

3. _____ _____

_____

_____

11. For each of your courses, list the various LETTER and corresponding NUMBER "grades" tthat any student can receive, (e.g., 'A' grade - 96 to 100).

COURSE 1	COURSE 2	COURSE 3	COURSE 4
_____	_____	_____	_____
_____	_____	_____	_____
_____	_____	_____	_____
_____	_____	_____	_____
_____	_____	_____	_____

12. Do any of our course instructors have a policy of "scaling" the grades depending on overall class performance?

YES_____ NO_____ DON'T KNOW_____

If YES, mention the course(s)_____

CLINICIAN'S GUIDE FOR
AWARENESS OF COURSE REQUIREMENTS QUESTIONNAIRE

QUESTIONS	COMMENTS
1.	This question helps to clarify the facilities available and grade point average requirements that the client must maintain to continue in his/her program of study.
2.	Every client needs to be aware of the requirements specified in the BDR Bulletin.
3,4	In case the instructor did not provide a typed "objective of course and its requirements" sheet, the client must clarify these issues with the instructor.
5,6,7,8	The response of all these questions must either be YES or NO. A DON'T KNOW response, calls for the clinician to explain to the client the importance of knowing these requirement details.
9.	This question helps determine whether the client is well aware of every detail of exam grading.

ASSESSMENT RECORDS

DATE	TEST/DESCRIPTION & PURPOSE	ADMINISTERED BY
____	_____	_____
	_____	_____
	_____	_____
	_____	_____
____	_____	_____
	_____	_____
	_____	_____
	_____	_____
____	_____	_____
	_____	_____
	_____	_____
	_____	_____
____	_____	_____
	_____	_____
	_____	_____
	_____	_____

WEEKLY OBJECTIVES

OBJECTIVE	DATE	COMPLETED

TASK ANALYSIS SHEET

OBJECTIVE:_____

1. _____
2. _____
3. _____
4. _____
5. _____
6. _____
7. _____
8. _____
9. _____
10. _____
11. _____
12. _____
13. _____
14. _____
15. _____
16. _____
17. _____
18. _____
19. _____
20. _____
21. _____
22. _____

TERM OBJECTIVES

OBJECTIVE	COMPLETE
1.	
2.	
3.	
4.	
5.	
6.	
7.	

COMPONENT C: MATERIALS FOR L.D. STUDENTS

The following materials include lists of organizations that can be contacted by the student, a guide to directories of colleges which serve LD students, questions to ask when selecting a college, a listing of steps for choosing a major and guidelines for matriculated LD students.

I. The following list includes the names and addresses of national organizations which assist University LD students.

The Association on Handicapped Student Service Programs in Postsecondary Education (AHSSPPE).

Purpose: To assist individuals with disabilities to participate fully in the mainstream of campus life. The national office shares information about postsecondary opportunities for disabled students. The organization sponsors a national Special Interest Group on learning disabilities which publishes its own newsletter on campus services and programs.

Location: P.O. Box 21192, Columbus, Ohio 43221, (614) 488-4972

National Network of Learning Disabled Adults (NNLDA)

Purpose: The Network provides mutual support understanding and communication among learning disabled adults, self-help groups, national organizations, and the general public. The Network also encourages institutions and employers to provide accommodations for the learning disabled adult.

Location: 808 West 82nd Street, F-2, Scottsdale, AZ 85257. For information on self-help groups, **contact Dale Brown, ALDA, P.O. Box 9722, Friendship Station, Washington, DC 20016.**

Heath Resource Center, The National Clearinghouse on Postsecondary Education for Handicapped Individuals.

Purpose: This Center gathers and disseminates information about postsecondary educational support services, policies, procedures, adaptations, and opportunities on American campuses.

Location: One Dupont Circle, Suite 670, Washington, DC 20036,

Toll-free number 1-800-54-HEATH, Washington, DC, 20202.

HELPFUL NATIONAL ORGANIZATIONS

Association for Children with Learning Disabilities (ACLD): For parents, teachers, other professions.

Purpose: To provide needed information and support - to follow the latest educational and medical research - to support legislation for special classes and trained teachers in the field.

Location: Find the organization nearest to where you live by writing:

ACLD, 4156 Library Road, Pittsburgh, PA 15234, (412) 341-1515.

Closer Look: A National Information Center for parents and professionals, operated by the Parents Campaign for Handicapped Children and Youth.

Purpose: To provide practical advice on how to find educational programs and other kinds of special services for handicapped children and youth.

Location: Closer Look, Box 1492, Washington, DC 20013, 800-522-3458.

The Council for Exceptional Children (CEC): For administrators, teachers, therapists, clinicians, students, interested persons.

Purpose: To provide an information center for general and specific information on learning disabilities, to publish useful material.

Location: CEC, 1920 Association Drive, Reston, VA 22091.

The Orton Society: For teachers, other professions, and open to parents.

Purpose: To study preventive measures and treatment for children with specific language disability, to sponsor research and share their findings.

Location: The Orton Society, Inc., 8415 Bellona Lane, Towson, MD 21204.

Time Out to Enjoy, Inc.

Purpose: This is a national self-help group for learning disabled adults, with the potential for assistance to professionals working with persons who have learning disabilities.

Location: 715 Lake Street, Suite 100, Oak Park, IL 60301.

II. The following includes a list of guides to postsecondary programs for learning disabled students. (The list is adapted from Scheiber and Talpers Campus Access for Learning Disabled Students 1985.

A Guide to colleges for Learning Disabled. Edited by Mary Ann Liscio, Academic Press, Inc., 6277 Sea Harbor Drive, Orlando, FL 32821. (490 pages ›24.95) 1984.

College Programs for Learning Disabled Students. National Association of College Admissions Counselors, 9933 Lawler Avenue, Suite 500, Skokie, IL 60077. (30 pages, $5.00). Update September 1985.

FCLD Guide for Parents of Children with Learning Disabilities. Federation of Children with Learning Disabilities, 99 Park Avenue, New York, NY 10016. (409 pages, $5.00) 1985.

Lovejoys College Guide for the Learning Disabled, by Charles Straughn II and Marvelle Colby. Simon and Schuster Publishers. (Available at local bookstores and libraries or write to Simon and Schuster, 1230 Avenue of Americans, New York, NY 10010) (144 pages, $10.95 postage and handling included) 1985).

Peterson's Guide to Colleges with Programs for Learning Disabled Students, Strichar. (Available from Peterson's Guides, P.O. Box 2123, Princeton, NJ 68540.) (400 pages, $13.95) Publication date October 1985

The Directory for Exceptional Children (eleventh edition). Porter Sargent Publishers, Inc., 11 Beacon Street, Boston, MA 02108. (1428 pages, $40.00 plus $4.00 postage) 1985-1986.

III. After identifying appropriate University programs, a visit to the school is recommended. The following list of questions will facilitiate the identification and selection of an appropriate program.

QUESTIONS TO ASK ABOUT A UNIVERSITY PROGRAM

The following questions should be asked of admissions or a director of services for handicapped students or an LD program director.

1. What are the requirements for admission?
2. How many L.D. students are on campus? What year are they in? Are they full-time, part-time, residents, commuters, traditional age, or older, men or women. Can you introduce me to one of these students?
3. What are the goals and objectives of the program?
4. What services are provided? Is there a charge for them? How does one obtain such services?
5. What specialized training in learning disabilities do the service providers have?
6. Is tutoring and/or counseling provided on a one-to-one basis or in a group? If in a group, how large is it? How frequently and intensively is it available?
7. What supervision is provided for non-certified instructors or tutors?
8. How is the duration of services determined? Is it usually one semester? One year? Two or longer?
9. Who will be my academic advisor and what training does this individual have in learning disabilities?
10. Do L.D. students take regular college courses? For credit?

11. Are any courses unavailable to LD students?

12. What modifications have faculty or administrators been willing to make for LD students on the campus?

13. Are there courses required of LD students? If so, do they carry college credit and does the credit count toward graduation?

14. How many LD students have graduated from this college? In what fields? What have they done since graduation?

This list is adapted from Dr. Susan A. Vogel, (In Press).

IV. The following narrative outlines the steps for choosing a major in a typical University setting.

CHOOSING A MAJOR

Following is a list of questions which the student can answer on his own and in conjunction with a counselor.

Objective 1: The student will choose three majors of interest.

Step 1. What majors am I interested in?

a. I am interested in _____

_____ Go to Step 3.

b. I don't know what I'm interested in ------ Go to Step 2.

Step 2. Go through the University Bulletin. What majors look interesting?

a. I am interested in _____

_____ Go to Step 4.

b. I don't know what I am interested in ----- Go to Step 3.

Step 3. Go through a career handbook, like the Encyclopedia of Careers and Vocational Guidance, Vol. II (Hopke, W.E., Editor), Chicago, IL: J.G. Ferguson Publishing Co., 1975.

Choose three careers of interest.

a. What careers look interesting? _____

_____

b. For these careers, I would need to major in _____

_____

OBJECTIVE 2: THE STUDENT WILL EVALUATE HIS CHOICES

Step 1. Answer the following questions.

a. Why did you choose the first area?_____

_____

b. Have you had any experience in this area?_____

c. Do you know anyone who is working in this area?

If yes, who? _____

d. Do you know anyone who is in this major at Penn State?

If yes, who?_____

e. What do you think you would study if you were in this major?

_____

_____

Steps 2 and 3. Answer these five questions for the other two majors.

a. _____

_____

b. _____

_____

c. _____

_____

d. _____

_____

e. _____

_____

OBJECTIVE 3: THE STUDENT WILL STUDY THE PREREQUISITES FOR THESE MAJORS.

Step 1. The student will obtain the results of his freshman entrance exams and copies of his current transcripts. The student will bring these to the counselor.

Step 2. The student will list the requirements for each major down the side of a sheet of paper.

Step 3. The student and the counselor will determine the student's ability to meet the requirements of each major based upon the student's performance on the entrance exams and according to the current transcript.

Step 4. The student and the counselor will put a question mark (?) beside the requirements which may be difficult for the student to meet and a star (*) beside the requirements the student can meet with few problems.

Step 5. The student will carefully evaluate the requirements for each major and answer these questions.

a. Can I meet the requirements for the first major?_____

_____

b. Am I still interested in the first major?_____

_____

c. Can I meet the requirements for the second major?_____

_____

d. Am I still interested in the second major?_____

e. Can I meet the requirements for the third major?_____

_____

f. Am I still interested in the third major?_____

OBJECTIVE 4: THE STUDENT WILL INVESTIGATE THE CHOSEN MAJORS.

Step 1. The student will ask the consultant in each of the chosen colleges what type of studying is involved in the major.

a. Is there a lot of math involved?_____

b. Will I have to understand many theories?_____

c. How much reading will I have to do?_____

d. Are the tests usually essay or multiple choice?_____

e. What type of career could I get if I graduate in this major?_____

f. What other things should I know about this majro?_____

_____

Step 2. The student will look at introductory textbooks in each major.

a. Can I read the text without too many problems?_____

_____

b. Does it look interesting?_____

_____

c. After reading a few pages, can I understand what I have read?_____

_____

d. Do I have enough math and science knowledge to understand the text?_____

_____

Step 3. After answering the above questions for each major, the student asks himself these questions.

a. Which major looks the most interesting?_____

_____

b. In which major would I get the best grades?_____

_____

OBJECTIVE 5: THE STUDENT WILL TAKE A CLASS IN THE AREA(S) HE IS MOST INTERESTED IN.

Step 1. If possible, the student will register for an introductory course in the major which now looks the most promising.

Step 2. The student will evaluate the course.

a. Did I like studying this topic?_____

_____

b. Did I do well? Why or why not?_____

_____

c. Would I like to take another course in this major? Why or why not?_____

_____

V. The following student materials include suggestions on self-management, class attendance, note-taking and preparing for exams. The student is also referred to Objective Four, Component C for a discussion of unique areas of intervention especially the section on SYSTEMATIC STUDY SKILLS

SELF-MANAGEMENT

1. Think of college as a full-time job! Just because you may have classes just 3-4 hours each week does NOT mean you will have excessive free time.
2. Coursework MUST be your highest priority! If you catch yourself avoiding your work, remember, you are practicing avoiding. If you really must have a break, set a goal, and once you have achieved it, then take a break. Remember that breaks are reinforcing, if you take a break to avoid work, you are reinforcing your avoiding behavior! Your bad habit is actually being strengthened!
3. Check yourself throughout the day---are you on schedule? If something comes up that you must do, remember to identify a time in your schedule that you will be able to make up the work.

CLASS ATTENDANCE

ACTIVITY: Class attendance is highly correlated with good grades. List* the dates of all classes the student has this term. Student should use this list to keep a record of classes attended

EVALUATION: Monitor class attendance by checking the list and the student's notes.

* A sample form follows.

CLASS ATTENDANCE

Class Attended	Day & Date	Preparation (reading, assign., etc.)

TAKING NOTES FROM A BOOK

_____ Write out the natural outline of the chapter, using the headings from the chapter.

_____ As you read the chapter, expand the natural outline. Instead of writing sentences from the chapter, write one or two words to represent an idea.

_____ Highlight or code material from the book outline that was covered in class. This information will very likely be on the exam.

_____ Plan specific times and dates for outlining each chapter. Try to outline chapters before they are covered in class.

_____ Compare chapter outlines to class notes.

CLASS LECTURE NOTE

ACTIVITY: Tape record one to five class lectures. Take notes as usual in the class, but skip lines in the notebook. After class, listen to the tape and, using a different colored pen, fill in information that you missed the first time (i.e., add detail). Cross out the information you wrote in the notes that is irrelevant. Repeat this activity several times. Compare your notes across days: Are the notes more clearly outlined? Do the notes contain only relevant information?

EVALUATION: Compare notes from 4 days. Check the following:

____ lecture recorded

____ notes modified

____ modified notes recopied

ALTERNATIVE ACTIVITIES: Borrow notes from a classmate and compare them to your own. Modify your notes as described above.

OTHER SUGGESTIONS:

- don't worry about what notes look like while you are in class - they can be recopied later.
- LISTEN, then write: keep asking yourself, "What is the main idea?"
- use boxes in the margin if you don't understand any part of the lecture. After class, ask the instructor to clarify any questions you have about that material. Check the box (_)when you understand.
- use a coding system to help you study for exams - if instructor reviews any maerial, put a star (*) next to it. Circle any terms you need to memorize (barometric pressure).

EXAMS

The following activities may be helpful in preparing for exams.

_____ check dates on the calendar when exams are scheduled

_____ check percentage of grade each exam is worth

_____ for each exam, prepare a study schedule which allows plenty of time for you to cover the material

_____ monitor progress on the study schedule

_____ practice test-taking skills--the following suggestions might be helpful:

_____ make up questions from each chapter... a sample test. Practice taking the exam

_____ check the exam file (Reserve Reading Room, Pattee Library) or ask the

instructor or former students for old exams...then practice taking them.

_____ prepare a list of questions and meet with the instructor several days before the exam to review them.

_____ participate in a study group made up of one or two other classmates.

_____ prepare a list of terms or formulas that must be memorized - then memorize them.

POST-EXAM ACTIVITIES

_____ check grade and write it on calendar or graph

_____ calculate what you need to achieve on the remaining exams, projects for target grade

_____ identify errors on exam--are there any patterns to the errors? Meet with the instructor if you don't understand why you missed on the exam.

DAILY WORK LOG

TIME	SPECIFIC OBJECTIVES	ACTUAL TIME	COMPLETE
_____	_____	_____	_____
_____	_____	_____	_____
_____	_____	_____	_____
_____	_____	_____	_____
_____	_____	_____	_____
_____	_____	_____	_____
_____	_____	_____	_____

DAILY SCHEDULE FOR TIME MANAGEMENT

Student: _____

Term: _____

80 weekday hrs.
+30 weekend hrs.
110 total hours

TIME		Monday	Tuesday	Wednesday	Thursday	Friday
13th Period 8:00-9:15	1st Period 8:00-8:50					
14th Period 9:45-11:00	2nd Period 9:05-9:55					
15th Period 11:15-12:30	3rd Period 10:10-11:00					
16th Period 1:00-2:15	4th Period 11:15-12:05					
17th Period 2:30-3:45	5th Period 12:20-1:10					
18th Period 4:15-5:30	6th Period 1:25-2:15					
19th Period 6:30-7:45	7th Period 2:30-3:20					
20th Period 8:15-9:30	8th Period 3:35-4:25					
	9th Period 4:40-5:30					
	10th Period 6:30-7:20					
	11th Period 7:35-8:25					
	12th Period 8:40-9:30					
9:30-10:30						
11-Midnight						

TIME	Saturday	Sunday
9-10 A.M.		
10-11 A.M.		
11-Noon		
Noon-1 P.M.		
1-2 P.M.		
2-3 P.M.		
3-4 P.M.		
4-5 P.M.		
5-6 P.M.		
6-7 P.M.		
7-8 P.M.		
8-9 P.M.		
10-11 P.M.		
11-Midnight		

CHAPTER FOUR

IDENTIFYING AND CONDUCTING RESEARCH IN SELECTED AREAS

Rationale

A review of the literature reveals that studies addressing identification, curriculum selection and modification, resources, advising, and characteristics of University LD students within specific domains, are either sparse or non-existant. Two important statements, however, pertinent to establishing a research base for a University LD program include the following:

A. **LOCAL NORMS ARE A MUST.** The diagnosis of a learning disability has historically involved a discrepancy between potential and achievement. A significant discrepancy between achievement within specific domains and a student's potential is impossible to evaluate in the absence of comparable statistics for a population of students already enrolled in a University curriculum.

B. **SINGLE SUBJECT RESEARCH IS A MUST.** Due to the heterogenous nature of the L.D. population, single subject research utilizing unique interventions within identified specific domains is warranted.

Based on the above statements, this section of the manual contains (A) a discussion on how one University conducted the development of local norms for the purpose of identification, assessment and intervention within specific domains (foreign language and written expression), and (B) a discussion of single subject research and unique areas of intervention (time management, study skills, mnemonics and spelling).

COMPONENT A. Development of Local Norms (IDENTIFICATION)

Amig (1985) states that "significant discrepancies between achievement and intelligence play an important role in the conceptualization and diagnosis of learning disabilities. Although several models of discrepancy have been used, the best ones require, as an intermediate step, the computation of correlation between intelligence and achievement and the standard deviations of both achievement and intelligence. These values are usually not reported for college age students, a population that is receiving increasing interest from both educators and psychologist." In her study, Amig tested 100 entering freshmen at The Pennsylvania State University with the Wechsler Adult Intelligence Scale Revised and the Woodcock-Johnson Psychoeducational Battery (these tests are administered as part of the standard battery of tests by the Comprehensive Model Program for Learning Disabled University Students for diagnosing a learning disability at Penn State). The results of this study showed that although all correlations between the three WAIS-R scales and the four Woodcock-Johnson scales were positive and predictive, validity of the Performance IQ on the WAIS-R was minimal. For the Verbal IQ, 11 of the 12 correlations were significant. Based on this data significant discrepancy values can be computed.

COMPONENT B. The development of local norms (foreign language).

A number of students have been referred to the Penn State Program because they were having difficulty learning a foreign language. Questions which immediately come to mind include: whether such a foreign language disability exists, how is it diagnosed, and what interventions might be helpful in coping with it?

<u>The existence of a foreign language disability.</u> Studies addressing the

existence of a specific foreign language disability have not been conducted. However, a review of the literature concerning the study of a foreign language indicates that many students identified as possessing a high degree of academic aptitude (as measured by intelligence and/or various achievement measures) fail to learn a foreign language (Ayers, Bastamente, & Campana, 1973; Carroll, 1962a). Attrition rates in foreign language training schools conducted by the military have at times reached the 80th percentile (Williams & Leavitt, 1947). Some teachers and psychologists hold a strong belief that learning a foreign language may invovle unique talents and skills not required by other academic subjects (Carroll, 1962). Two-thirds of the foreign language teachers sampled in an international survey felt there was "such a thing as linguistic aptitude apart from general intelligence" (Fife, 1931, p. 135).

Admittedly, the existence of a foreign language disability is equivocal. However, students with good attitudes toward learning a foreign language, but who have reportedly failed foreign language courses, in spite of intensive tutoring, are being referred for diagnosis. Perhaps students with good attitudes toward learning a foreign language but who exhibit a discrepancy between general aptitude (as measured by intelligence and achievement measures) and foreign language achievement are LD.

In order to develop University norms for predicting success in learning a foreign language at The Pennsylvania State University and to identify predictors of success in learning a foreign language, the following procedures were conducted.

The Modern Language Aptitude Test (MLAT) The Modern Language Aptitude Test was selected as a potential measure of foreign language aptitide. Its subtests purport to assess a variety of abilities (memory, auditory discrimination, and grammatical sensitivity) thought to be related to foreign language learning ability. These abilities have

been cited in the LD literature as potential areas of deficit in LD populations. For example, LD children often demonstrate particular deficiencies in the processing of syntax (Meier, 1971; Rosenthal, 1970; Semel & Wiig, 1975; Wiig & Roach, 1975; Wiig & Semel, 1976). LD students also exhibit deficits in auditory discrimination and memory (Boder, 1973; Denckla, 1977; Hallahan & Kauffman, 1982; Ingram, Mason, & Blackburn, 1970; Myklebust, 1965). In addition to measuring specific abilities, a general consensus exists that the MLAT is the best available predictor of achievement in foreign language learning (Allen & Natelson, 1977; Gardnes & Lamber, 1972; Lutz, 1967).

The MLAT consists of the following five subtests administered through an audio recording (see Carroll & Saponn, 1959):

Part 1: Number Learning. This subtest is reported to measure memory and "auditory alertness" which is thought to be important in auditory comprehension.

Part 2: Phonetic Script. This assesses "sound-symbol association ability" and appears to be related to the ability to understand and mimic speech sounds.

Part 3: Spelling Clues. This highly speeded test is dependent on sound-symbol association ability and knowledge of English vocabulary.

Part 4: Words in Sentences. This is thought to measure "sensitivity to grammatical structure" and is thought not to depend on formal instruction in grammar, since no grammatical terminology is invovled.

Part 5: Paired Associates. This is a test of rote memory.

Procedure. In order to determine if the MLAT was related to foreign language learning of students at The Pennsylvania State University, the test was administered to students enrolled in introductory French, German, and Spanish classes. The sample consisted of 42 students from 4 French classes; 57 students from 3 Spanish classes; and 83

students from 5 German classes. MLAT scores were then compared with foreign language course performance represented by each student's final grade in his/her foreign language course.

Results. The fourth subtest of the MLAT and an attitudinal measure (Raymond, 1983) resulted in a reasonably accurate prediction of foreign language achievement. The fifth subtest of the MLAT entered into the regressionn analysis in the third step.

Discussion. MLAT-4 reportedly assesses "sensitivity to grammatical structure" (Carroll & Sapon, 1959, p. 4). Low scores on the MLAT-5 are symptomatic of a memory deficiency, likely attributable to the use of inappropriate mnemonic strategies by the learner. There is a growing body of literature demonstrating the effectiveness of certain mnemonic strategies for improving one's foreign language vocabulary learning ability (Paivio & Desrochers, 1981). These techniques, in particular the "keyword" method, are of greatest benefit to students who do not initially perform well on memory tasks (Pressley, Najamura, Hope, Bispo, & Toye, 1980). While these diagnostic tests (i.e., the MLAT-4, MLAT-5) are by no means deterministic of foreign language proficiency, there does exist a moderate relationship. Recent research suggests that the information these tests provide is potentially valuable; future research will dictate how valuable the information is.

For now, it is suggested that students who exhibit good attitudes toward learning a foreign language but who score low on the MLAT subtests and have shown low achievement in learning foreign languages may be LD.

COMPONENT C. The development of local norms (WRITTEN LANGUAGE).

Referrals to the LD program at Penn State have included students who exhibit problems with written expression. Federal regulations include written expression as an area in which LD students exhibit a potential/achievement discrepancy. Difficulty with written expression at the University level gives rise to questions similar to those presented by students who exhibit difficulty learning a foreign language: How does one diagnose a disability with written expression (and especially spelling)? What can be done after diagnosis?

The existence of a written language disability. As is true for the foreign language domain, studies addressing a written language disability at the University level have not been conducted. LD adults, however, exhibit problems with written expression (Blalock, 1981; Cordoni, 1980; Murray, 1968; Vogel, 1982). Vogel and Moran (1982) in a pilot study of LD adult essays, found that LD groups were lower on word selection, total T-unit points, and the percent of complex T-units. LD students scored significantly lower on mechanics, spelling, points on total sentences, and on the percentage of compound complex sentences.

Studies of characteristics associated with written expression include fluency, vocabulary, and syntactic maturity as developmental indicators.

Fluency. Fluency has been shown to be positively correlated with age (Bear, 1934; Cartwright, 1968a; Frogner, 1933; Hoppes, 1933; LaBrant, 1933). Clause length and the use of complex sentences also increases with age. Variety in sentence length and types are additional fluency factors (Goda & Griffith, 1962; Harris, 1948; Heider & Heider, 1948;

Hunt, 1965). A number of studies have concentrated on T-unit length rather than sentence length because of the difficulty in defining a sentence. Hunt (1965, 1970) and others have used T-units length as a fluency measure and found it to be a reliable indicator of maturity in written language.

Vocabulary. Like fluency, vocabulary richness and diversity expand as a person matures (Templin, 1957).

Syntactic maturity. Syntactic maturity ". . . including the rules of language grammar and mechanics" (Cartwright, 1969, p. 634) ensures communication between writer and reader. Research indicates that syntactic maturity tends to increase as individuals get older (Hunt, 1965). Typically, mature writing is characterized by a greater number of variety of transformations (Hunt, 1970). With progressive development , individuals use longer T-units, lengthened by sentence-combining transformations and loaded with adjectives, adverbs, prepositional phrases, and appositives (Kidder, 1974, p. 61). Since growth in fluency, vocabulary, and syntactic maturity have been shown to be part of the overall development of written expression, these characteristics were chosen for analysis by the Penn State program.

In order to develop University norms for evaluating written expression at Penn State University and to study predictive variables, the following procedures were conducted.

Procedure. The normative sample included students enrolled in basic English writing courses. Each student wrote a composition using the following protocol.

Directions: You will have 30 minutes to plan and write an essay on the topic printed below. YOU CANNOT BE GIVEN CREDIT FOR AN ESSAY ON ANY OTHER TOPIC.

You must fit your essay on the paper provided in the following pages. You will receive no other paper to write on. You will find that you have encough space if you write

on every line, avoid wide margins, and keep your handwriting to a reasonable size.

Assume that your home-town newspaper has invited you to submit your essay as a possible editorial. Spend a few minutes planning your essay, perhaps jotting down a few notes in the space below the question. Consider the following quotation:

"In going forward, there are always certain risks." For example, progress often demands moving from the secure to the uncertain.

Decide how true you think this statement is. Then, using examples from your observation or experience, try to persuade your readers to accept your point of view.

When the supervisor announces that 30 minutes have passed, you must stop writing your essay, so plan carefully and observe the time.

Ratings. Each composition was graded independently utilizing a scoring scale of 1-5; five indicating a superior essay. A reliability analysis of cross rater scores revealed r = .84454. This level of inter-rater agressment is not as high as some reported in the literature (Çooper, 1978). Given a one to five scale, however, the coefficient is an accepted one.

Composition Analysis. Each composition was entered into a computer file in its original format. Mechanical corrections were not made. Thematic units were, however, designated by the transcriber using guidelines derived by Hunt (1965). The Computerized Language Analysis System (CLAS) Program (Borden & Watts, 1981) was used to analyze each of 423 compositions on a number of language variables used to assess fluency, vocabulary, and syntactic maturity. Fluency measures calculated by te number of words used in the composition included: a) the total number of words in the composition, b) total number of paragraphs, c) total number of sentences, d) total number of T-Units. Vocabulary was analyzed by diversity as measured by: a) the number of different words used in the composition. In addition, diversity was calculated by: a) the average length of

the words used, b) two type token ratios including Herdan's K, and Carroll's. Carroll's type token ratio is determined by dividing the number of different words by the square root of two times the total number of words, and is reputed to be less influenced by composition length than similar measures (Carroll, 1964). Herdan's K functions independently of composition length and indicates richness or density of vocatulary as well as diversity. Syntactic maturity was analyzed by:

a) number of words per T-Unit, b) number of words per paragraph, c) number of words per sentence, d) number of sentences per paragraph, e) number of statements, questions and exclamations used. A stepwise regression analysis was then conducted to determine which language variables would best predict the holistic ratings.

Results. Table One and Two respectively show the stepwise regression analysis of the written language variables on each of the two holistic ratings.

TABLE ONE

STEPWISE REGRESSION USING WRITTEN LANGUAGE DIAGNOSTIC VARIABLES

N=423			SCORE ONE	
STEP	**VARIABLE ENTERED**	**R2**	**R**	**P**
One	NTYPES - Number of different words in composition	.305	.551	.0001
Two	MWORD-P Number of words in a paragraph	.327	.571	.0002
Three	MWORD-T Mean length if T-Unit	.342	.585	.002
	NWORDS-S Number of words in a sentence		.06	

TABLE TWO

STEPWISE REGRESSION USING WRITTEN LANGUAGE DIAGNOSTIC VARIABLES

N=423			SCORE TWO	
STEP	**VARIABLE ENTERED**	**R2**	**R**	**P**
One	N-TYPES Number of different words in composition	.352	.59	.0001
Two	MWORD-P Number of words in paragraph	.380	.62	.0001
Three	NEXCLAM-Number of exclamations	.386	.62	.05

In both cases the vocabulary measure N-Types (number of different words in the composition) was the single best predictor of holistic composition ratings accounting for .30 and .35 per cent of the respective variance. The number of words per paragraph entered the regression equation at the second step of the analysis, respective variance.

Descriptive statistics on the two variables (N-Types, N of words per paragraph) reveal the following: a) N-Types M 147, SD 36, Range 44-243, b) N of words per paragraph M 99, SD 64, Range 29-459.

Discussion. Written expression is an area in which L.D. students exhibit a potential/achievement discrepancy. At The Pennsylvania State University, a number of students have been referred to the University program for LD students because of difficulties with written expression. The question, however, of how to diagnose a disability with written expression at the University level is not clear. In order to study predictive variables for success in written expression, components of compositions covering fluency, vocabulary and syntatic maturity were analyzed. The subjects included 423 students entering freshman English classes. Based on referrals to the LD program over a five year period, it was hypothesized that LD students were probably included in the sample. The results of the analysis showed that the number of different words used in a composition was the single best predictor of independent holistic ratings of individual composition, followed, by the number of words in a paragraph. Comparative analyses of compositions (using the above cited procedures for writing a composition) written by students referred to the LD program, for problems with written expression, reveal writing characteristics, on the identified variables, similar to students at the low end of the University freshman sample. Individualized education plans for these students include techniques for improving diversity of written expression and fluency.

COMPONENT D: Single-Subject Design

When conducting research in the field of learning disabilities, the single-subject design appears to be the most widely used method. Although this design has been criticized for its lack of external validity (i.e., the results can not be generalized to the population) it is important to remember, once again, that the LD population is extremely heterogeneous and generalizability would be difficult in any case. The initial concern when developing a program for the LD college population is to improve the functioning of the specific individual. Therefore, each subject must be dealt with on an individual basis, with treatment and intervention geared specifically to that student.

In a single-subject design, the key to generalizability is replication. The important principles of basic research design are as follows:

1) repeated and reliable measurement (for internal validity)

2) baseline stability, that is, describe the target behavior and obtain the baseline data before any environmental manipulations are carred out;

3) only one variable should be manipulated throughout the experiment.

The two major categories of single-subject design which are used are 1) the A-B-A design, which consists of alternate phases of baseline (A) and treatment (B), the best design being A B A-B (demonstrates effects of treatment twice, strengthens conclusions of study); and 2) the multiple-baseline design (where baseline data is connected on several behaviors). The Single-Subject design is undoubtedly a valuable complement to a group design.

Gay, R.L. (1981).

COMPONENT E: Unique Areas of Intervention

A. Self-Management

When it is decided that a student has a deficit self-management skills, an intervention program is initiated to prompt and promote those skills that are lacking. The intervention components are selected for each individual student based on his/her self-management capabilities and learning needs. Depending on the needs of the student, one or more of the following components are developed into an intervention program: a) determining the suitability of a courseload and/or individual courses; b) determining the student's knowledge of course requirements; c) setting up a time management schedule; d) programming effective study skills.

In determining the suitability of a student's courseload, basic information such as that found on the "Preparedness for Course Enrollment" form is gathered. (See Guidelines and Materials Chapter). This helps to ascertain whether the selection of courses has been undertaken in a planned and reasoned manner. The responses to these questions provide information regarding the rigor of the courseload, the necessity to take the courses, and an awareness of other commitments.

At this point, the clinician should make sure that the student has a complete knowledge and understanding of the course requirements. To do this, the clinician may go over the syllabus for each course with the student and review each requirement. The form entitled "Awareness of Course Requirements Questionnaire" may be used here to focus in on the policies and requirements of the courses. It will force the student to identify these factors if he/she hasn't at this point. Then the clinician may decide to focus in on one or more courses to carefully delineate the requirements for success. This may include discussing

what is needed to get a good grade, what the tests are comprised of, a rating of the instructor and an indication of reading and writing requirements. This is to determine if the course is suitable for the student at that time. The "Course Evaluation Inventory" may be used at this time.

An integral part of all self-management is the element of time management. Time management strategies should be interwoven among the other components in order to make the self-management program successful. To facilitate setting up a time management schedule, the "Time Management Questionnaire" should be completed. This will help estimate the student's perception of his/her capabilities, and whether the hours needed or wanted for study actually match the number of hours available for study. In addition, the student is questioned about the qualitative elements of study time; these factors should be discussed and the clinician may need to advise the student on goal setting, priority ordering, etc. Finally, it may not be sufficient that the student independently plans and carries out his/her own time management schedule. The clinician may need to prompt either more rigorous or more realistic planning, and will probably need to monitor the extent to which the student follows the proposed schedule.

It is recommended that a time management schedule be set up weekly and a monitoring system be established to insure compliance with the schedule. For example, the student and clinician may agree on a schedule in the beginning of the week. Then the student crosses out each scheduled block of time if the proposed activity took place during that time. The clinician should keep a record of this performance, and when a 90% or greater correspondence between the planned and the actual activity is achieved (and remains over a period of time), the clinician may no longer need to monitor how closely the student follows the schedule. The scheduled activity for each block of time may range from a very general

(e.g., "study") to a very specific (e.g., "read and highlight pages 101-103 in Biology text"). In this way, a time management schedule can be used to plan and check that all the class requirements are being carried out on time (e.g., attends class, does homework problems, studies for test, takes test, etc.). Time management can become the foundation of an effective intervention program.

Finally, a component of self-management intervention programs that is fundamental in a university setting is the promotion of effective study skills. If a student has deficit self-management skills, it usually is the case that he/she has poor study skills. Specific study skill strategies that may become part of your intervention program include systematic notetaking techniques, organized learning habits and efficient study strategies. An ideal systematic study skills package should incorporate researched learning principles; it should synthesize and organize all available course material into one unit for study. A highly recommended strategy involves both organized learning habits and an efficient study strategy. In addition, it may be helpful for the student to complete the "Instructor-Student Contract Questionnaire." This will aid the clinician in planning for good sources (e.g., professor, TA, peers) of study skills interventions. It may also indicate some areas of concern (weak study skills & exam preparation habits) that the clinician may want to clarify before the semester gets too much under way.

B. Study Skills

Systematic Study Skills

Anna Gajar, 1984

DESCRIPTION

Overview

The approach to study skills presented by the program invovles the use of sequential strategies for the purpose of:

A. Selecting relevant information from class notes and assigned readings.

B. Organizing selected information.

C. Achieving mastery of the information and/or course content.

The model is analogous to the input-output model used in computer technology, where each final product ("output" -such as question/answer) is the direct consequence of a series of highly structured/controlled study activities ("input").

The package includes a description of a self-monitoring study scheme, based on principles of direct instruction. In addition, an alternative description for use with tutors or peer monitors, is presented. In short, the materials can be used successfully on an individual basis or, dependent on individual needs and availability of external resources, with teacher, peer, or tutor assistance. The program is tailored for use in upper level high school courses and all college and university courses.

Program Assumptions

The primary assumptions of this program is that the mastery of a series of systematic study skills will result in passing grades in any course. In other words, the program is

geared toward aiding the student in improving his/her test taking ability. The following secondary assumptions used in the development of pertinent study skills, should result in improved academc performance.

A. Study skill tasks are stated in terms that are operational, clear, and precise.

B. Each study skill task has a predetermined objective and a measurable scoring system.

C. Study skill tasks are presented in an ordered sequence which is in line with the logical sequence of learning.

D. Study skill tasks are aimed at attainable goals.

Unique Features

Features of this program which set it apart from other study skill packages include the following:

A. This study skill package can be used with any college-level course. Its unique structure organizes and synthesizes all available course resources into a compact unit for study. This package is highly specific and targets that needs to be learned for each particular course, and at the same time it has the adaptability and versatility needed to facilitate the learning of very diverse course material. The package in essence sidesteps study skill training senarios where initially study skills are taught and then an attempt is made to generalize the skills to a specific curriculum. For this reason, it is recommended that this package be used simultaneously with all courses that a student needs a structured learning routine.

B. The contents of the study skill program are based on sound theoretical

principles, and program components are condusive to empirical research. The sequence of study skills is systematic and based on a highly prescribed program of activities that promote academic success through a combination of learning strategies.

First, it utilizes the principle of repeated practice which is a demonstrated learning principle. The entire program is data-based, molding itself on firm research design. Through a unique coding system that is straight forward and easy to use, the student monitors his/her own progress, and based on discrete evidence, adjusts further study needs and areas of focus. In addition to this self-monitorization, there is also a direct instruction aspect of the package which may be utilized. This fact provides for a tutor or peer to both facilitate the student's learning and monitor his/her progress. Also, a reliability measure is suggested where a peer or tutor checks that the student is following the package accurately and completely.

C. The time factor is comparable, or less, than traditionally employed. While it is recognized that this package prescribes a set of activities that are indeed time consuming, it is held that the effort required is realistically comensurate with the time necessary for success in a specific course. As stated above, the program sidesteps the training of study skills independent of actual course requirments; a strategy which historically has invovled an investment of time outside of course study. The proposed program facilitates the adaptation of study skills to actual course content.

Contents

Materials:

1. One three ring binder, approximately 7" X 10"
2. Contents for each course include:
   a. one course data sheet
   b. three packets of colored paper (e.g., yellow, pink, blue)
   c. four binder separation tabs
   d. three colored highlighters (e.g., yellow, pink, blue)
3. Manual
4. Students directions for using the study skills package.

Methods:

1. The student takes complete and accurate notes in class.
2. Immediately after each class the student highlights the class notes using the following method:
   a. highlighting vocabulary (terms or word definitions) with a yellow marker
   b. highlighting concepts (main ideas and supporting details) with a pink marker
   c. highlighting concept and term relationships (comparisons and relations between concepts and terms) with a blue marker.
3. After outlining class notes the student develops an "active file" by daily recording of the information from his/her notes into a binder. The development of an active file involves recording each item of information on

separate pages under the appropriate sections labeled: Terms, Concepts, and Relationships. (These labels correpond to the three color coding procedures used by the student at the time of high-lighting.)

4. Each day the student follows procedure 1 and 2 above on assigned readings.
5. The student then records the information from his/her outlined text or assigned text or assigned readings into the appropriate sections which correspond to class notes. If readings do not correspond to class notes, then new binder pages are used for unique Terms, Concepts, and Relationships which have not been addressed in class lectures.
6. The student then composes a question for each item and records this question on the reverse side of the page.
7. (Optional). It is recommended that within the first week of the program's start (and periodically thereafter), a peer/classmate or a tutor follow the same procedure (1-6 above) as the student with the identical course material. Then a correspondence between tutor and the student's study skill package will indicate the extent to which the student is following the program format. A 90% correspondence is recommended to insure that the student is both taking accurate and complete notes (1 and 4 above) and that he/she is recording the information correctly into the skills binder (2, 3, 5, 6 above).
8. The student then tests him/herself on all items in the active file, and records a +/- and the date in the columns on the page designated for this purpose.
9. After the student has scored three consecutive (+) marks as a result of daily self-quizzing, the items are transferred from the "active file" into the

"inactive file" at the back of the binder.

10. The student periodically tests him/herself on the items that have been mastered by randomly selecting 30 items from the "inactive file." (Optional-It is recommended that a tutor or a peer/classmate conduct this part of the testing on a weekly basis).

11. The immediate study target includes the information that needs to be learned from one class exam to the next. The clear, concise, and organized format of the information recorded in the study skills binder will prove to be ideal for preparing for an examination.

C. Mnemonics

Mnemonics are defined as Memory Strategies that physically "transform" to-be-learned materials into a form that makes them easier to learn and to remember. Mnemonics are not to be thought of as memory strategies such as rehearsal, clustering, or semantic processing. They are a subset of memory strategies and often utilize pictoral representations or visual images in conjunction with verbal information. There are three variations on the mnemonic method that are typically used: the pegword method, the keyword method and like method of loci. The pegword method involves a probe used to retrieve the associated information. The method of loci involves associating a visual image with the to-be-learned information. In the keyword method, a word is selected to be associated with the to-be-learned information based on its sounding like this information or rhyming with it.

Currently, very little research has been done into the efficacy of the use of mnemonics with the very specific population of LD adults and/or adolescents. The following

is a review of articles on research conducted in this area. However, the research that has been done on mnemonics with general populations indicates that this learning strategy has limited applications. These limitations are two-fold: the mnemonic method is appropriate for paired information and/or lists of material such as foreign word vocabulary lists, lists of U.S. presidents, elements and their atomic weights from periodic tables. The second limitation is that this strategy seems not to generalize, i.e., once learned by the student it remains associated with that particular learning task rather than being applied to other learning situations.

1. Mastropiere, M.A., Scruggs, T.E., & Levin, J.R. (1985). Mnemonic strategy instruction with learning disabled adolescents. Journal of Learning Disability, 18(2), 94-99.

Rationale for this study was the lack of the development of rehearsal or elaborative strategies in LD students. The method taught S's was the mnemonic keyword method, which has 2 stages:

1) acoustical link stage - unfamiliar stimulus transformed into keyword which is a familiar word and is acoustically similar to the stimulus and is easily pictured.

2) second stage involves imagery linked process where keyword is transformed into a visual image where the keyword and the to-be-associated information are interacting.

Hypothesis: that LD students' deficits (previously supported by data) in learning through pictures because of attention deficits will be overcome by this method.The task was to memorize lists of mineral hardness and their names. There were 3 conditions: mnemonic condition, questioning

condition (where S's were engaged in verbally & visually interacting with inforamtion on flashcards about the minerals), and a free-study condition (where S's were given specific time to study then quizzing, which was the motivator to learn material).

Results show the powerful effect of pegword/keyword techniques; they found this technique to be most powerful with disabled and non-disabled students. For LD students, the questioning condition was second best, but not so for non-disabled students, suggesting the need for LD's for effective learning strategies. Authors claim this technique holds promise for long-term retention, too.

2. Reddy, B., Goverdhan, R., & Bellezza, F.S. (1983). Eleboration versus mnemonic story condition and organization of internal cues and encoding specificity in college students. Journal of Experimental Psychology:
Learning, Memory and Cognition, 9(1), 167-174.

The level of recall was directly related to the degree to which the contextual information produced during encoding was reinstated during recall. This supports the encoding specificity hypothesis. If internal cues are organized, as they are when using mnemonic device, they can be used in a systematic manner both at the encoding and at the retrieval levels to optimize recall.

3. Pressley, M., Levin, J.R., & Delaney, H.D. (1982). "The mnemonic keyword method." Review of Educational Research, 52(1), 61-91.

The keyword method is a 2-stage procedure for remembering materials that have an associative component. In case of vocabulary learning, the learner must first acquire a stable association between the unfamiliar word and the familiar word that sounds like the salient part of the new word. Acoustically similar new word is the keyword and its definition. This method has been investigated most extensively with recall of definitions from vocabulary word lists. Other aspects of vocabulary learning are also appropos. Classroom applications are discussed.

4. Lewinsohn, P.M., Danaher, B.G. & Kikel, S. (1977). Visual imagery as mnemonic aid for brain-damaged persons. Journal of Consulting and Clinical Psychology, 45, 717-723.

This study was to evaluate the efficacy of visual imagery as a mnemonic aid for brain-damaged persons. Performance during acquisition and during recall after 30 minutes and after one week are compared under the imagery and the non-imagery conditions in brain-injured S's and in normals on 2 tasks of 15 items. One task was paired-associate learning and the other was a face-name task. The results were:

1) Normals performed better than brain-damaged S's on all comparisons.
2) Visual imagery facilitated performance for both groups on the paired-associates task and the face-name task during acquisition and

recall after 30 minutes but not after one week.

Implications are for use of visual imagery as a mnemonic aid developed especially with brain-damaged S's/individuals are discussed. Authors note that maintenance is a problem with brain-injured persons and needs more research.

5. Carlson, Les, Timmer, John W. & Glover, John A. (1981). First letter mnemonics: DAM (don't aid memory). Journal of General Psychology, 104(2), 287-292.

This article is a review of literature on mnemonic research and does not deal specifically with learning disabled persons.

The review reveals inconsistant results and a series of interesting areas of additional studies. Primarily, these studies involved the effects of first-letter mnemonics.

6. a. Pressley, Michael & Levin, Joel R., eds. (1983), Cognitive Strategy Research: Psychological Foundations. New York: Springer - Verlag.

b. Pressley, Michael & Levin, Joel R., eds. (1983), Cognitive Strategy Research: Educational Applications. New York: Springer - Verlag.

These 2 volumes contain research on learning disabilities in general, plus such topics as aphasia and dyslexia. There are also references on mnemonics.

In the area of research on learning disabilities, the trend is toward identification of distinct subtypes of learning disabilities. This will suggest training the student in specific cognitive strategies to accommodate his/her particular disability(ies). Specific disabilities may be perceptual, linguistic, attentional, memorial, or metacognitive, but are mostly revealved through reading problems (Pressley, M., & Levin, J.R., eds., 1983). Accommodation focuses primarily on memory strategies since retention of information is the object of learning.

Controversy exists over whether reading difficulties and dyslexia are caused by perceptual problems or memory disorder(s). Thus, current research has focused on attention deficits, short-term memory (STM), long-term memory (LTM), and metamemory (our knowledge of memory skills and strategies that work for us).

LD students have difficulty distinguishing relevant from irrelevant information and previously this was attributed to failure of the filtering system known also as selective attention. Recently, this position has been challenged because it has been found that the amount of incidental learning in LD students and in "normals" does not differ (Tarver, 1981). Here intentional learning has been found to differ between LD students and normals, pointing to a failure of STM rather than to attentional deficits.

Some general conclusions regarding STM and LD students are that in tasks of recall, LD students have been found to perform more poorly as the rate of presentation of material is slowed and the effects of interference on learning tasks is greater for LD students rather than normals. These results suggest LD students are not rehearsing or processing as thoroughly as normals. The inability of the memory system to cope with overload is a central feature of learning disabilities (Cohen & Netley, 1978). It appears that normals possess both spontaneous and voluntary abilities to organize, process and encode information into

memory, and here they differ from LD students.

In the area of long-term memory (LTM), research indicates that organization of materials semantically is not deficient in L.D.'s, but faulty encoding of information into LTM is implicated. Cognitive structural factors do not differ between LD students and normals but spontaneous use of organized study strategies is deficient in LD students (Dallage & Moley, 1980). The major cause of LTM deficits in LD individuals seems to be poor encoding strategies.

Studies to accommodate these deficiencies have focused on such strategies as cumulative rehearsal strategy and chunking of information into meaningful units. These learning strategies have been demonstrated to be effective, but only when the lacking strategies are provided or taught (Dawson, et al, 1980). Any learning strategy must be established and practiced before it becomes organized and can be used as an aid to learning.

In conclusion, caution must be exercised not to conclude that training in the various learning strategies eliminates the differnces between LD students and normals. Some studies have demonstrated that these strategies benefit normals as well, therefore, the degree of benefit must be measured to see if LD students have improved to a greater degree considering their lower initial level of performance.

D. Spelling

Webster (1979) defines spelling as "the forming of words from letters according to accepted usage: Orthography." Orthography is defined as "the representation of sounds of a language by written or printed symbols;" ortho coming from the Greek meaning "correct" and graphy meaning "writing." Spelling is exact and the ability to spell is necessary for effective written communication, an essential academic skill. Poor spelling (consistently inconsistent) is a common characteristic of the LD student. Despite this, spelling has

typically not been an area of interest for research, especially in the field of learning disabilities. This could be attributed to the fact that the field of learning disabilities is a young and very controversial one. The scant amount of research that has been conducted has been done primarily on school-age children, with little emphasis on college-age adults. Disagreement among experts as to the etiology of spelling deficiency has led to different hypotheses and approaches for remedial spelling instruction.

Several different theories have been postulated as to the cause of a spelling deficiency in learning disabled individuals. Most of these hypotheses are based on the assumption that there is a deficit in one or more of the processing functions. These would include auditory receptive problems, poor visual and auditory memory and discrimination, visual-motor integration difficulties and sound-blending ability. Hagin (1971) states that the pervasive difficulty of the LD adolescent is an inadequacy in dealing with symbols. One of the most popular notions is that of a sequencing deficit. More recent research is tending to disprove this contention. Seymour and Corpodas (1980) argue that spelling depends on permanent storage of information about letter identity and sequence. They propose the notion of a structural coding deficit. Nelson (1980) suggests that spelling difficulties are not due to a sequencing deficit but rather to poor memory capacity or attentional processes.

Despite the great divergence of thinking on etiology, there is more agreement on the need for some type of error analysis system. These practical systems enable the educator to develop specific instructional techniques, based on each student's strengths and weaknesses.

Over the last decade, several error classification systems have been developed which are primarily concerned with children's spelling. Yarborough and Silva (1983) recognize the need for a diagnostic/remedial decision-making protocol for adolescent/adult spellers. They have designed a model with a new error classification strategy with 2 objectives:

1) to determine frequency of given types of errors

2) to identify severely disabled spellers

Their error analysis system can be applied to the everyday writing experiences. It is divided into identifying errors within the four basic characteristics of spelling. They are:

1) Language

2) Learned Lexicon

3) Orthographic Conventions

4) Anomalies

This system enables one to pinpoint errors and specific needs. From this basic framework it is now possible to apply appropriate instructional techniques.

Based on the preceding assumptions, several difference methods of intervention have been introduced over the years. The majority of these techniques are specifically for elementary-age children. The following is a brief summary of some of the more effective procedures. For a more detailed description the reader is directed to the accompanying list of references.

Two of the traditional interventions which have been used widely with LD children are the Orton-Gillingham method (Gillingham & Stillman, 1975) and the VAKT (Fernald, 1943). Both these approaches are multisensory, facilitating spelling instruction by combining the visual, auditory (phonics), and Kinesthetic (writing) modalities. Fernald added the tactile modality and the emphasis on the motivation factor paired with successful experiences. This method was found to work well with older students. Phonetic training is a common instructional and remedial technique.

Many different interventions for teaching spelling have been proposed; however, not all have proven effective. Graham & Miller (cited in Hallahan, Kauffman & Lloyd, 1985)

reviewed the research and summarized which procedures were found to be useful. The following is a shortened version of their findings, emphasizing those strategies thought to be most applicable to a college L.D. population:

Effective and Ineffective Practices in Spelling Instruction

1. Using a synthetic approach (one in which students learn to build up correct spelling from letter-sound correspondences and generalization) is superior to a syllable approach.
2. Requiring students to correct their own tests and practice on the words they misspelled is very beneficial.
3. Having students devise their own methods of studying is not valuable.
4. Requiring students to copy words repeatedly will not guarantee retention of the correct spellings.

A system of Morphographic Spelling has been developed by Dixon (1976). This is in an intensive, highly-structured teacher-directed remedial spelling program for 4th - 12th graders and adults. This technique assumes students know basic spelling skills and begins instructions with morphographs (small units of meaningful writing).

A study by Catherine Terrell (1983) on L.D. adolescents suggests three possible factors which may contribute to significant improvement in spelling performance: 1) a systematic study period; 2) peer-tutoring and; 3) mutual behavioral contracting. Further studies on a college LD population with these three variables could be encouraging as these are all factors easily implemented at the college level.

Allred (1977) states that the self-corrected test has been found to be the most important single factor contributing to achievement in spelling.

Bryant, Drabin and Gettinger (1981) hypothesized that the LD student may be

particularly susceptible to overloading and interference. Based on these findings, they suggest that spelling instruction should be modified by reducing the number of words taught.

Most recently, a cognitive-developmental model, which assumes that L.D. spelling errors reflect a cognitive-linguistic delay, not-deviance, has been proposed (Frith 1980). Gerber (1984) postulates that L.D. students are not lacking in the elementary knowledge of basic academic tasks. Instead, he posits that they lack a means for effectively managing and monitoring such information. He thus concludes that an effective intervention strategy would be supplementary instruction in general problem-solving skills as they relate to the acquisition of basic academic skills. This theory is also plausible for college LD students because some form of study skills and problem-solving strategies are usually part of their college experience. It is also a refreshing optimistic theory, emphasizing the student's strengths.

Using this cognitive-developmental model, Nulman & Gerber (1984) provide support for a problem-solving approach as well. They hypothesize that an effective remediation strategy would be the use of contingent imitiation and modeling:

1. Teachers can use error pattern analysis to diagnose spelling problems and plan remediation strategies.
2. In spelling instruction teachers can show children how to model adult spelling through self-correction.

As stated earlier, the majority of these remediation strategies were developed based on research with school-age populations, both LD and normal. The great need for research in this area for a college LD population, a population in an atmosphere where an enormous emphasis is placed on effective written communication, can not be ignored. In the meantime, with extreme caution and consideration for each individual's specific needs, some of these

strategies may be applicable when dealing with LD college students. Careful monitoring of the individual's progress will determine whether the remediation is effective or detrimental. Until specific remediation strategies can be proven effective, it may be suggested that evaluation of an LD student's written work be based on content, rather than mechanics, specifically spelling.

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